HYGEIA

THE HEAL[illegible]MAGAZINE

Published by th[illegible]ical Association

September, 1928

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SCHOOL NUMBER

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Contributors to This Issue

SEPTEMBER brings America's twenty-four million school children back to desks and books and the question of their health as it relates to school is paramount for both teachers and parents. This, the annual school number of HYGEIA, presents pertinent discussions of school health problems by competent authorities.

DR. W. W. BAUER, who attacks the time-honored method of closing schools to fight epidemics, is health commissioner of Racine, Wis. As director of the bureau of child health of the Virginia state board of health, DR. MARY EVELYN BRYDON outlines a plan for making and keeping children physically fit for school life. DR. EMILY GARDNER, co-author of the article, is Dr. Brydon's colleague in her work.

RUTH PECK MCLEOD is a familiar name to HYGEIA readers as the author of "Bigger and Better Breakfasts" last October. DR. CAREY P. MCCORD is connected with the Industrial Health Conservancy Laboratory of Cincinnati.

DR. FRANK HOWARD RICHARDSON is one of those persons who are too well known to need introduction. He is perhaps best known to HYGEIA readers through his articles on "The Nervous Child," which appeared during 1927.

R. P. WODEHOUSE concludes in this issue a series of three informative articles on plants responsible for different types of hay-fever. OLIVE SWANSON is associated with Iowa State College at Ames, Iowa. DR. B. FRANKLIN ROYER is medical director of the National Society for the Prevention of Blindness.

Direction of the school boy's play so that he will develop properly and will learn some games that will carry over into adult life is the business of ALFRED E. PARKER, director of physical education in the Berkeley (Calif.) high school. G. H. ESTABROOKS, PH.D., is connected with Colgate University, Hamilton, N. Y.

W. M. GARDNER has written interestingly in HYGEIA at various times on the care of the teeth. Children will enjoy both the foreign letters by KATHARINE RANGER and the story of the "late twins" by BLANCHE J. DEARBORN, the author of "Giant on the Hill."

J. MACE ANDRESS, PH.D., is a lecturer on health education at Boston University and the Boston School of Physical Education and is the author of many health books for both children and teachers.

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THOMAS SYDENHAM

PROPE HUNC LOCUM SEPULTUS EST
THOMAS SYDENHAM
MEDICUS IN OMNE ÆVUM NOBILIS
NATUS ERAT A.D. 1624
VIXIT ANNOS 65

Health Almanac

SEPTEMBER 1928

1 THIRTY DAYS hath September, April, June and November.

2 BE SOBER and temperate, and you will be healthy. —B. Franklin.

3 LABOR DAY.—Labor is one of the great elements of society—the great substantial interest on which we all stand.—Daniel Webster.

4 I KNOW A LADY that loves to talk so incessantly, she won't give an echo fair play.—Congreve.

5 THE LAST WORDS of Louis XIV were: "I thought dying was more difficult."

6 IN A SOUND SLEEP the soul goes home to recruit her strength, which could not else endure the wear and tear of life.—Rahel.

7 TO THE TOWER, and there sent for the Weekly Bill, and find 8,252 dead in all, and of them 6,978 of the plague, which is a most dreadful number, and shows reason to fear that the plague hath got hold that it will yet continue among us.—Diary of Samuel Pepys, Sept. 7, 1665.

8 WHISKERS will soon be in fashion if the price of shaving gets any higher.

9 THE DISOBEDIENCE of the patient makes the physician seem cruel.

10 THOMAS SYDENHAM, one of the world's greatest clinicians, born in England, 1634; died, Dec. 29, 1689.

11 THE COST of high living is higher and higher.

12 IT HAS BEEN REPORTED that physicians are about to strike for an eight-hour day, forty-eight hour week, double fees for overtime, triple fees for Sunday, obstetric cases Wednesdays and Saturdays and hemorrhages to occur in the morning only.

13 SWIMMING, it has been suggested, may relieve some forms of insanity, but the modern bathing suits make many wild.

14 GENIUS is the ability to sidestep trouble.

15 DURING THE SUMMER the house is kept open, fresh air is everywhere, and the patient does well. When the chill of autumn comes, however, the house is shut up except for a brief daily airing.—Lawrason Brown.

16 THE DOCTOR is humane by definition.—Joseph Conrad.

17 DON'T WORRY! They aint nobuddy that sum-buddy don't knock.—Abe Martin.

18 IT IS BETTER to talk through the nose than through the hat.

19 THE DOCTOR sat and laughed with glee,
And he chuckled loud and merrily:
"The football season starts today,
Things now begin to come my way."

20 THE LAWS OF HEALTH, if they are to serve as good guides, must be accurate and scientific, and at no time can they depend on superstition and hearsay.—J. F. Williams.

21 IT IS QUITE LIKELY that the modern contrivances for making Sunday schools amusing have given them (the children) the distaste for the more solemn services of the sanctuary. If so, the amusement is a sin.—S. J. Prine.

22 THERE IS little new under the sun—murder, suicide and poisoning are as old as man himself. Remember Cain and Abel, Socrates and Lucretia Borgia.

23 AUTUMN BEGINS. Now cometh the fall but not in the cost of living.

24 THE AUTUMN with its fruits provides disorders for us, and the winter's colds turn them into sharp disease, and the spring brings flowers to strew our hearses, and the summer gives green turf and brambles to bind up our graves.—J. Taylor.

25 SOME MEN love truth so much that they seem to be in continual fear lest it should catch cold on overexposure.—Samuel Butler.

26 GARGLING with strong antiseptics will invariably kill the influenza bacillus provided you can catch him and make him gargle.

27 FEW PEOPLE can tell a good doctor from an ignorant one.

28 THE BIG NEED of the day is a form of exercise that will decrease the weight without increasing the appetite.

29 THE MORE you puff a cigar the smaller it becomes —that is the case with some men.—Boston Transcript.

30 SEPTEMBER is gone, now comes fair October; a healthful month for those who will be sober.

M. F.

THE *Wrong Way to* FIGHT *Epidemics*

By W. W. Bauer

With the schools closed, the children are left free to attend the movies, play in groups, go shopping with their mothers, ride in the street cars and expose themselves to whatever disease is going the rounds.

ALMOST any day during the contagious disease season, from September to May, you may pick up a newspaper and find a story something like this:

CLOSE SCHOOLS TO FIGHT SCARLET FEVER

Sometown, Dec. 15.—The school authorities closed the schools here today on account of an outbreak of scarlet fever, which began in the Washington school, where seven children in the fourth grade are ill, according to a statement issued by the board of education today.

One child is dead, and some of the others are seriously ill, it is reported. The schools will not be reopened until the situation is regarded as entirely safe, the board announced.

When you read a story like that, you can make up your mind to one of two things about that town; either it has not provided its school system with health service, or the health officials have not learned one of the first things they need to know about handling epidemics. Closing the schools is the wrong way to fight epidemics.

Freedom from School Increases Dangers

What happens when the schools are closed, either for regular vacations or because of a contagious disease scare, is that the children are left free to follow their own devices. They seek amusement. They attend motion picture theaters, play among themselves in the neighborhood, ride on street cars, go shopping in crowded stores with their mothers, have parties, go to church and Sunday school; in short, they do everything they have been doing all the time except go to school. Let us take the case of a child who got scarlet fever.

When the Doctor Comes

The doctor was called, and made the diagnosis. While the young mother was wondering how she would ever endure a four weeks quarantine, or possibly longer, she answered the doctor's questions:

"Where was he three to five days ago?"

"I don't remember—you see, he would have been in school, only the schools are closed on account of the epidemic."

"Try to remember where he was."

"Let me see—this is Saturday; Monday I was at home, and he played out—"

"With whom?"

"With some of the boys around. Junior, do you remember who the boys were?"

"They weren't boys from around here, mother; they go to the other school, but that's closed."

"So the boy doesn't know," the doctor mused; "well, how about Tuesday? Do you know what he did that day?"

"Oh, he couldn't have been exposed then. He spent the entire afternoon with me, shopping.

We weren't with any children. He played indoors alone all morning."

"You were shopping in the big stores? Crowded, I suppose?"

"Yes, awfully crowded. And Wednesday we went over to the other end of town—"

"To see Grandma," the boy interrupted eagerly, "a long ride on the street car."

"And I suppose," the doctor was amused, "you saw no children all this week, wherever you went?"

"Oh, of course, doctor, but we didn't know them, and of course paid no attention to them."

"Except to mix in crowds with them, breathe the air they have breathed, and get thoroughly exposed to whatever may be going the rounds, which happens this year to be scarlet fever."

Can't Trace Cases Back to Their Source

The doctor picked up his gloves, but as he went out of the door he turned back.

"If this city provided proper health service in the schools instead of closing them for epidemics," he said, "I might have been able to follow this case back to its source. Of course we couldn't be sure to trace every case, but often we could. For one thing, you would know pretty definitely where and with whom he had been. As it is, you can only guess. For another thing, the boys from some other school, with whom he played, and whom he didn't know, wouldn't have been over this way, and you would not have gone over to your mother's until Saturday, when you could have used your own car instead of the trolley."

"But, doctor," the mother exclaimed, "closing the schools was always the first thing they did for an epidemic when I was a child."

"Yes, and breaking the ice in the wash bowl was always the first thing you did in the morning when you were a child, but you wouldn't do that now, at least not without a great deal of complaint."

"The children never get these contagious diseases until they are of school age," she insisted. Childhood ideas die hard. "As soon as they start school, they begin getting these diseases."

"As soon as they mingle with others, yes. But while you have close contacts in public conveyances, theaters, stores, children's parties, and neighborhood games, the schools should not be made to bear the whole blame for spreading epidemics."

"Why, then, is there less contagious disease when the schools are closed? Since they closed the schools here, there have been only half as many cases reported, according to the papers."

"Quite right. Half as many have been reported. Sick children are not being discovered in school by the teachers, and reported to the health department. And let me tell you—if this city provided real health service, this epidemic would look bigger than it does now."

"Why?"

"Because the schools would be open, public health nurses would be going into the homes to find out why children are absent, and in that way they would learn about the cases of scarlet fever that now are being treated by parents without calling a doctor, because they don't recognize it as scarlet fever, because they are too poor to call a doctor, or because they want to escape quarantine. If we knew about these, the number of cases in this epidemic would be considerably increased."

"But there can't be so many, doctor."

"One case in five is not reported, according to the records of a number of cities about which I happen to know. And that isn't all. These cases are not only unrecorded, but uncontrolled. Perhaps you sat next to a child with scarlet fever on the street car. Perhaps the boys Junior played with Monday, and didn't know, may have the disease. They spread contagion just the same, you know, even if there isn't a sign on their houses."

Need School Nurses and Doctors

"After that explanation I can see," the mother exclaimed indignantly, "that they'd be more dangerous. But how can we defend ourselves against them?"

"Not by closing the schools. Get some school nurses and a school physician. Use the schools to bring your epidemic conditions to light, but don't blame them for what they show. The star you look at isn't in the telescope; the instrument merely makes you able to see it. I have been telling that to city officials for a long time."

"But doesn't that cost too much?"

"By the time you have finished with this quarantine, it will cost you alone at least half a month's salary for one nurse. And one nurse can do a lot of good in half a month, if you get the right kind."

"But if the officials don't see these things, what can we do?"

"Use your vote." The doctor fairly snapped his answer, as he closed the door.

As his coupé disappeared down the street, the young mother's lips tightened in a line of determination, then moved slightly as she murmured, half aloud, "We have had about all we are going to stand, of the wrong way to fight epidemics."

Fit for the First Day of School

By Mary Evelyn Brydon and Emily Gardner

IF A child almost sightless should enter one of our best public schools to be taught by one of the most successful primary teachers who, for the sake of argument we shall say, did not know he was nearly blind and therefore would give him no more individual attention than she gave other members of the class, how rapidly do you suppose he would learn? The fact that he could not remember a common word shown to him repeatedly would naturally cause the teacher to class him in the subnormal group. Moreover, his awkwardness in handling material would intensify that opinion.

Again, if a child almost deaf should enter the primary grades under similar conditions, how quickly do you suppose he would learn? His inattentiveness and his inability to repeat words and sentences he had been told over and over again would cause the teacher to class him in the subnormal group. The child would no doubt prove to be the bad boy of the class, since his natural energy would have to be used in some way and would probably be misdirected.

Many See and Hear Only Partially

Our whole system of education is based on seeing and hearing. Because of this a child who is totally blind or totally deaf is at a distinct disadvantage and has to be taught in special schools. Unfortunately there are attending our schools a large group of children who are partially blind or partially deaf. They are not defective enough to be included in the special classes and are trying to learn by the same methods used in teaching children who have no such defects. In the state of Virginia alone in 1925 there were found to be 66,326 children with defective vision and 17,186 with defective hearing. These figures are taken from the reports of physical inspection made by the teachers in the public schools.

Other Physical Defects Are as Serious

Other physical defects are not so obviously at fault in causing retardation so far as school work is concerned but are, because of their insidious nature, just as serious if not more so. A person with a severe cold is because of his disability forgiven lapses of memory or roughened edges of disposition. A person with a toothache would never be expected to be attentive to anything except his own woe. A tuberculous patient would never be declared guilty of laziness because of chronic fatigue. Yet, in lesser degree, in some instances we expect our children to live and learn under grave handicaps, and they are not excused for their disabilities.

A child who is a mouth-breather and is subject to chronic colds cannot concentrate as successfully as a healthy schoolmate with the same mentality. A child with abscessed teeth, often aching, to say nothing of the poisoning of his whole system by the absorption of pus, is not free to learn as rapidly as his intelligence would permit. An undernourished child sub-

ject to fatigue, which may show itself under the guise of overactivity, so-called nervousness, is a victim of inefficiency and lack of thoroughness. To quote Virginia statistics again, last year of 330,085 public school children inspected, 11 per cent were mouth-breathers, 56 per cent had defective teeth and 22 per cent were underweight to a considerable extent.

Most Defects Can Be Remedied

Fortunately the defects mentioned are for the most part of a remediable nature and need not necessarily hamper a child's progress forever. The medical and dental professions have done much toward correcting these defects. Most of the defects of vision can be totally or partially overcome by properly fitted glasses. Unfortunately deafness is not so easily corrected. There are no lenses for the ears. However, it may often be forestalled or checked by correction of a nose or throat defect.

Mouth-breathing, chronic colds and sore throats can usually be overcome by proper attention to nose and throat. Decayed or abscessed teeth can be repaired or removed by a dentist. Underweight, despite lean fathers and mothers, can almost without exception be corrected with suitable hygiene and dietetic care, provided the child is not suffering from any physical defect or incipient disease.

Therefore, the outlook is not so black as the figures would indicate, provided all mothers and fathers can be intelligently interested in their children. No one doubts the love of parents for their children, but there is room for conjecture as to the wisdom displayed by many parents in the physical care of their children.

How can we get each child under the supervision of doctor and dentist from infancy on?

Fortunately, most of the defects mentioned are remediable. Even more fortunately, most of these defects are preventable. Many cases of deafness could have been prevented by care of nose and throat conditions; mouth-breathing with its attendant deformity of the dental arch and nose can be prevented if the cause, such as adenoids, is removed early. Abscessed teeth can be prevented by early care of any decay that may occur. Underweight may be avoided if the child is taught to eat the right sort of food in sufficient quantities in early life and to live under a regimen of good hygienic habits, provided, of course, he has no malady. Even defective vision itself may be in part preventable when other sources of physical disability are removed. As early as the age of 5 or 6 years these defects are present in large numbers. Of 323 such children examined and statistically studied recently, 27 per cent were 10 per cent or more underweight, 68 per cent had defective teeth, 59 per cent had enlarged or apparently diseased tonsils and 12 per cent were mouth-breathers.

Such defects develop at an early age, and it is a part of the program of the child welfare bureau of the Virginia state board of health to educate parents in the importance of preventing defects or in the early correction of any that may exist. One means of educating parents has been through itinerant traveling child welfare conferences. To these conferences parents come with their infants and preschool children, and the children are examined in the presence of their parents by doctors from the state board of health. Each parent is given advice as to the proper care of the child, and if any defects are found the parents are advised to consult their family physician or dentist as the case may be. Because of the bureau's limited funds, it has been possible to examine only about 3,000 children each year.

While these conferences have their place in the preliminary education of parents as to the importance of periodic medical examinations, yet they are far from reaching the ultimate end desired. They are but one means to that end, which is medical supervision of the home, including an annual examination of each child by his own family physician.

Why the Family Physician

Why should he be examined by the family physician? The family physician knows the heredity of the child; perhaps he was present at the birth. The physician knows whether the child is allowed to have his own way or is under the careful, intelligent control of the parents; whether faulty food habits are due to poverty or to ignorance; whether the home is sanitary or not, and many other environmental influences. He is the one best acquainted with his own patients. Often they are his personal

friends. He is more directly interested than any strange doctor can be. He has seen them through too many illnesses for them not to feel the strength and reliability of his wisdom. He lives in the same community and has the same interests at heart.

There exists a confidence in the family doctor, such as no outside clinician can command. From this confidence is born the authority of the family physician. His advice is not received as the expression of a faddist. His patients know him well enough to appreciate that what he recommends is the result of well founded belief in the efficiency of such a measure. Furthermore, he is always on hand for consultation and continued supervision. He is able to observe progress or lack of progress and can judge when it is best to change the course of treatment. He feels the responsibility for the welfare of his patient; to him is due the success or failure of his treatment. His office is often well equipped for certain laboratory examinations that may be needed to clear up the diagnosis and promote more extensive and intensive study of obscure cases.

A Plan for Medical Supervision

But how can we get each child under the doctor's supervision from infancy on? We have no organization such as the school with which to work. Each parent has supreme control over his own offspring and can be compelled to do nothing for the health of his child provided he does nothing overtly to outrage humanity. A gradual education of the parent in preventive medicine seems the only way. As a practical starter of such an education some such plan as that outlined below may be feasible.

Those who play parts in this plan are the family physician, the county public health nurse (if there is one), the superintendent of schools, the primary teacher, the parent and the child whose welfare is the goal. The key person is the child who is entering school at the beginning of the next session. The focus of attention is upon him. He himself appreciates his importance. He is entering a new era in his life. The parents are aware of his new growth. It is his first step out of the home dominion. He is to be placed largely on his own responsibility and in competition with others. His parents are desirous that his start be the best possible and are ready to welcome any help in that direction.

According to the plan, the superintendent of schools takes the first step. He requests every child who enters school for the first time to have a medical examination during the summer before entrance. A survey is made of these beginners and in this survey the name of the family physician of each one is obtained. Then the children are listed according to their family physicians. The list is taken by the public health nurse (if there is one) to the physician and he sets aside a date for the examinations. The superintendent sends a letter to each parent, stating the date set by the physician for the examination and requesting that the child be taken to the physician's office at that time. It is further explained that this examination is not for charity, but that a nominal fee will be charged those able to pay. The nurse can arrange transportation for those who need it.

On the day of the examination the nurse meets the parents with their children at their own family physician's office and relieves the physician of such details as tests for vision and hearing, weighing and measuring and clerical work, should the physician desire it. The findings that are required for the physical inspection of school children, the birth record, the vaccination record and any additional facts that may be of help to the teacher in understanding the health of the child are recorded on individual cards. These cards are sent by the doctor to the superintendent, who distributes them to his primary teachers when school opens in the fall.

Before the opening of the schools, the nurse attends to whatever corrective work the doctor has requested her to have done.

The proof of the puddin', so to speak, is the report of the primary teachers in the fall. They will not be required to make the physical inspection in the schoolroom or send the usual notices to parents, but they will be asked to check over the cards of the beginners and find out how many corrections have been made since the examination and how many children needed no corrections. They will report this to the division superintendent of schools.

Educating the Parents

Wherein does this solve the problem of medical supervision for every child? Only in this way—if we can get parents to take one healthy child to their physician's office each year, they may be convinced of the value of such an examination in preventing future defects or ailments and may bring all of their apparently healthy children for a similar check-up. It will give the doctor a chance to ask that they be brought. It will enable the doctor to carry out such preventive measures as vaccination for smallpox and typhoid and protection against diphtheria in accordance with public health laws and regulations. Finally, it will eventually send the majority of the children to school every year in physically fit condition and the day will come when there will be medical supervision in every home.

That this program does not insure medical supervision of every child is admitted, but if the program succeeds it will be a step in that direction.

When *Light* Suppers Mean *Heavy* Digestion

By Ruth Peck McLeod

MANY mothers who do their own housework are tired when the day is drawing to a close and they give the children what they call a light supper, meaning one that is easily prepared. However, it is light only in the preparation; in the digestion it is likely to be heavy.

Adequate suppers are no more trouble to prepare than those suppers that the mother dreads to contemplate when nothing has been prepared in advance. Well balanced evening meals simply require a little forethought. When the mother looks around and says, "Well, I don't know what to have for supper," she usually seizes a box of ready cooked breakfast food and supplements this with eggs. If the children's appetite does not seem to be satisfied after such a meal, she may add a few sweet "package" cakes.

Some mothers lean upon the delicatessen store for the evening meal, serving highly spiced meat loaf, ham, chilli sauce, and the various salads overseasoned with red peppers and other condiments.

Can Warm Over Vegetables

If the husband of the family is away the wife is more than ever inclined to fall into the "easy supper" habit, as she is often too tired herself to care whether she has anything or not. An ice-box supper often results.

From my own experience I have learned that it is a good plan to prepare a generous amount of vegetables at dinner and to warm them over for supper. This provides an easily prepared, and at the same time a digestible, supper. The mother must not depend solely on milk to nourish the young, growing child. He needs bulky vegetables rich in vitamins; these should be either buttered or served in cream sauce and should never be cooked with a piece of greasy salt pork. Along with these vegetables, the child needs additional fruits, some raw and some cooked.

The average American child is constipated if fed largely on the bolted cereals and white breads. Wholesome suppers made up of fibrous fruits, succulent vegetables and branlike breads will stimulate intestinal action. The whole wheat breads, coarse vegetables and fruits cannot help but bring about favorable results. The adults of any family will also be benefited by such a diet. In fact the meals of a child are admirably suited to the adult, save that the child requires a greater percentage of protein, or tissue building foods.

Need Variety in Vegetables and Fruits

Suppers consisting of one cooked vegetable, one cooked fruit, one raw vegetable and one raw fruit are splendid. For the cooked vegetables, creamed or buttered carrots, spinach, cabbage, green beans, cauliflower, squash, peas or tomatoes are excellent.

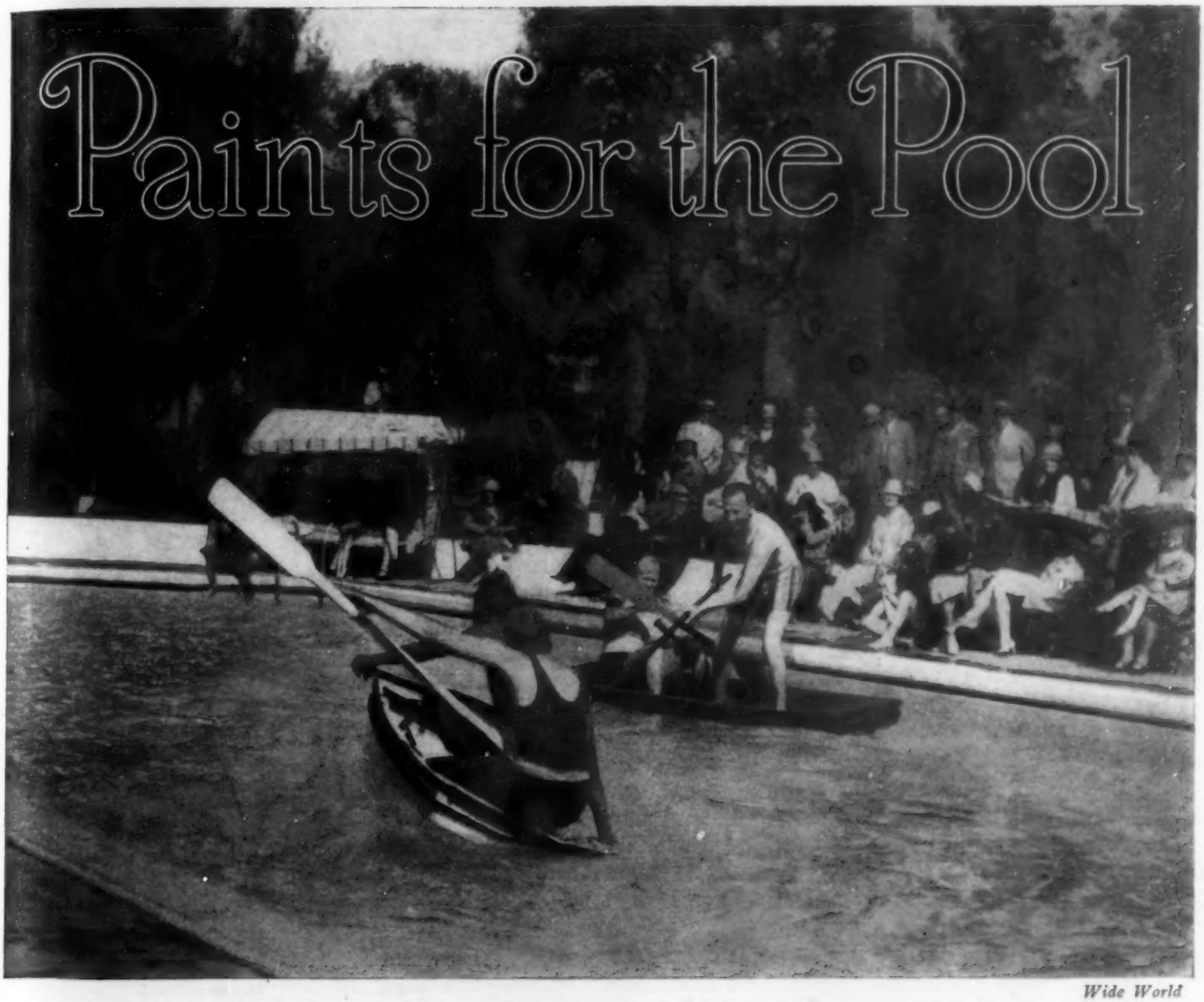
The raw vegetables might be chosen from such a list as celery, lettuce, cabbage slaw (made with lemon juice instead of vinegar), sliced tomatoes and raw carrots, the latter cut up in combination salad for older children.

The fresh fruits might consist of oranges, grape fruit, apples, peaches, pears, plums and bananas.

Variety in vegetables and fruits costs no more than the ready cooked cereals or expensive delicatessen dishes. Another argument against the cereal supper is that the majority of breakfasts consist of cereals and eggs. This is a repetition of the supper and gives two acid meals in the day.

The best way to prepare an easy supper is to prepare an abundant noon meal from which there will be sufficient left-overs to meet the needs of the evening meal for adults as well as children.

Paints for the Pool



Wide World

One city with a handsome outdoor swimming pool had to call in scientists to determine why the water was unsafe for bathers. It was found that the paint on the walls and bottom of the pool was destroying the chlorine injected into the water for its bactericidal action.

By Carey P. McCord

THE sleek, white painted walls and bottoms of swimming pools are no guarantee of water purity, since some paints are capable of destroying the chlorine placed in swimming pool waters for its bactericidal action.

One midwestern city in 1926 opened an outdoor swimming pool, 60 x 200 feet, with a water capacity of 490,000 gallons. This swimming pool was equipped with two quartz filters of the most modern design, having a capacity of 40,000 gallons hourly. Provisions were thus made for filtration of the water twice daily. The filtered water, before reentering the pool, was chlorinated by means of a high type of liquid chlorine delivery apparatus, so that any amounts of chlorine up to 25 pounds daily might be injected into the water.

Soon after the pool was opened it became obvious that proper amounts of available chlorine were not being supplied in the pool water. The chlorine delivery apparatus was set at progressively higher levels without the desired results. When the limit of chlorine delivery was reached, the water at the point of entry into the pool was highly charged with chlorine, to the point of irritation of bathers' eyes, while 100 feet away the water was apt to contain only such traces of chlorine as 0.025 part per million.

It was considered probable that the loss of chlorine was due to the fact that all inlets for water were at the shallow end of the pool, and that water agitation due to bathers in the shallow waters led to air and sunlight oxidation of the chlorine. For this reason, approximately one third of the chlorinated water was then delivered at the deep end of the pool. This did not improve the situation. It was later considered possible that currents of water ran from

the inlet points to the outlet points, without general dissemination of water and chlorine. The use of dyes disproved this assumption.

At the end of the outdoor swimming season an effort was made to determine the cause of this abnormal situation. It was found that the concrete pool had at the time of its construction been painted with a water paint of unknown composition. Some of this paint in powder form had been retained by the pool operator. Under laboratory conditions, known quantities of chlorine were added to city water, to distilled water, and to distilled water containing small quantities of this paint powder. At intervals tests were made for available chlorine. The city water and distilled water yielded the quantities anticipated. The water treated with the paint powder yielded only negligible traces of available chlorine. Some of the paint was removed from the pool and the tests were repeated. A chlorine destroying result was exhibited.

The Chemist's Report

The problem was submitted to a commercial chemist interested in swimming pool control. His informal report follows:

"I find that this paint has a peculiar make-up. It is highly caustic with some sort of soluble causticity, which slowly dissolves over a considerable period of time. I am unable to decide exactly what effect this feature would have on the available chlorine, but do not believe that it would be responsible for the trouble. It appears to be due to sodium silica of a dry form, which has been used in the paint as a binder. The most objectionable feature that I found in this paint was a considerable amount of organic material of some sort, which I was unable to identify, but believe is some sort of glue. This organic material was soluble and continued to appear even after the paint had been washed for a considerable length of time. This, I believe, is the factor that has been using up the chlorine, for it would be much more active than any organic material that exists in the water in this suspended state."

This soluble organic paint constituent is accepted as responsible for the loss of the chlorine and the resulting less desirable water conditions in the pool described.

In subsequent laboratory experiments other sources of chlorine destruction were found in paints. At the present time the cost of pure white lead exceeds other white pigments, for which reason many paints contain either no lead or lead in mixture with cheaper pigments. These other pigments are frequently desirable as lead substitutes for reason other than cost. The use of white lead paints in nursery furniture is undesirable because babies may eat the flakes; in such cases the use of zinc white or zinc white in combination with barytes is preferable. In the case of swimming pools, any sulphide paints should ordinarily be avoided. The combination between zinc white and chlorine may be seen in the following:

$ZnS + 2\,Cl \rightarrow ZnCl_2$ (zinc chloride) + S (sulphur)

Thus the chlorine is lost.

In many pools it becomes necessary to add copper sulphate to eliminate fungus growths in water. The combination of copper and sulphide salts of metals leads frequently to a dingy blackening of the pool walls and floors. Esthetically, this is unwanted by the swimming public, and this sometimes causes the swimming pool operator to withhold copper sulphate when it is needed.

What Is a Good Paint?

What then is a good swimming pool paint? Powdered marble or sand may be expected to result in a fairly white pool surface. Such a paint base mixed with oil will prove objectionable, however, unless ground very fine, because of the abrasive action on the feet and hands of bathers in shallow waters. No glue should be employed under any circumstance.

Pure white lead in linseed oil should provide a suitable swimming pool paint so far as the maintenance of the chlorine content of the water is concerned. Unhappily, lead paints exposed to water often become dingy. Best results with lead may be expected if, after the lead-oil paint is applied, several coats of oil alone are utilized. Even when the paint is thoroughly dried, it is unlikely that a truly impervious coating has been obtained.

Barite or gypsum is to be exculpated as a destroyer of chlorine. These paint pigments are not wholly satisfactory because of low covering powers.

Tiles may be employed when cost is not an item of concern.

Perhaps best results are obtainable if in the building of the pool the outer concrete surface is coated with a cement rich in powdered white marble. Later any abrasive action threatened may be machined off by sanding machines. While the appearance of the pool may not be so attractive as the shiny white resulting from lithophone, the distressing white glare is avoided, and, what is of much greater importance, chlorine if used for purification of the water is retained.

In any swimming pool it is not sufficient merely to add chlorine to the pool water. It is necessary to make sure that the chlorine is not wasted by useless combination with other chemicals, such as has been described. The only chlorine that is helpful is the uncombined, available chlorine, which when properly disseminated kills all bacteria that are likely to enter the pool.

The Runabout Child and his Problems

By Frank Howard Richardson

NOT so long ago it was accurate to speak of the years between 2 and 6 as the neglected age. These years after the carefully guarded first months have gone by and before the school doctor and the school nurse start in their course of examinations were until yesterday neglected by physician and social worker alike. It was no unusual thing to find that the child who at 18 months or 2 years was a so-called "perfect specimen" had before he reached school age become undernourished, slouching and anemic from malnutrition.

The time has gone by when we can justly call this period the neglected age. Kindergarten has been preceded by Montessori school, and Montessori school in turn by nursery school, until today the newest of the educational mills take the child at 18 months, when he is hardly steady on his little legs, and subject him to the careful observation and analysis that is understood when the progressive education movement is spoken of.

While this is true of the favored few, it has not yet become general; and so the state of mind that allowed the term "neglected age" is still to be dealt with. Books, magazines, lectures, correspondence courses, children's bureaus of city and state departments of health, have taught us that these first years of the child's life are of paramount importance in the formation of his character trends, his emotional "set," his future inner life. We have still to learn that they are quite as important from the standpoint of his physical health. It is so much easier to lock the stable door than it is to try to recover the stolen horse that it does seem as if we might do some of the simple things the need of which medical science has taught us, if we are to safeguard these little lives that have been given into our care.

First we have the preventable diseases. Of these, easily first stands diphtheria, the scourge that is as terrible today, when once it gains headway, as it was before we had either antitoxin to combat it or toxin-antitoxin to prevent it. The alert physician and the alert parent have banished this disease from among the dreads that parents had less than a generation ago; but less conscientious parents and less aggressive doctors still have it to contend with.

Three tiny needle pricks, a week apart, buy probably lifelong immunity at such a cheap price that it is hard to be patient with those who neglect to purchase it for their little ones. No child should pass his first birthday without such protection. The Schick test may well be given him on his second, to make sure that he has received enough of the protective substance to render him entirely immune. A toxin-antitoxin mixture made with goat's serum is now being used, to lessen the possibility of danger from subsequent administration of tetanus-preventing serum.

It is unnecessary to urge on readers of HYGEIA the fact that no

The Preschool Age

Between babyhood and the first day of school lies an important period in the life of a child. Not much has been written on the problems of this age that will serve as a guide to the thoughtful parent. This new *Hygeia* series by Dr. Richardson will answer that need. It will deal with the nutrition, weight, posture, eyes, tonsils and adenoids, hearing, teeth and general habits of the runabout child.

child is safe who has not been rendered immune to smallpox by the simple, safe and sure procedure of vaccination. Only less important than these two protections is the third one, rendered well known by the experiences of many of our young men during the World War—that against typhoid fever. The sooner in life this protection comes, the better. As soon as a fourth becomes a little better standardized and safeguarded, scarlet fever will be added to the group of preventable diseases; but neither this nor measles is yet on a basis that allows them to be urged as a general procedure for all children, like the preceding three.

While there is no specific protection against measles, whooping cough, chickenpox or mumps, it is well to remember that any one of these usually simple diseases can become highly serious in the case of the very young or the very weak infant. In all of them we can have the protection that is afforded by isolation from exposure or from suspicion of exposure; and this protection can never be denied with impunity.

Even the common cold—*especially* the common cold, it might have been fairer to say—is to be looked upon with dread by those who have the care of infants. No greater health service can be done the child than protecting him against such infection. Other things being equal, many of the common diseases are much more highly infectious to young children than to children in later life; and many of them are far more serious when contracted at this time.

One has only to look at the statistics of automobile accidents to realize that a new hazard has been added to those that have always beset the runabout child. Parents can no longer allow children to play unguarded on city sidewalks. The child who strays into the street, and the automobile pleasure car or truck that gets out of control and onto the sidewalk are accountable for a hideous toll of child life. Warning the child against running into the gutter may salve a parent's feelings; but it is no safeguard against accident, as many a mother knows to her eternal sorrow. The neglected age may be fatally well named in such instances.

In addition to these more or less obvious duties of doctors and parents, there are some not so obvious. The fact that the care of the well child is comparatively new in medicine makes it particularly timely to discuss, as will be done in succeeding articles of this series, some phases of the examination and management of the runabout child that are essential for maintaining him in health and strength.

("The Nutrition of the Runabout Child" is the subject of Dr. Richardson's article for the October issue of Hygeia.)

Helping the Cripple to Help Himself

FIFTY thousand men and women are added every year to the army of those disabled by disease and accidents. This startling figure, computed by the Federal Board of Vocational Education, does not include those that are unfit for rehabilitation. About 14,000 arm and leg amputations occur each year as a result of accidents.

Only within recent years has the adult cripple received serious attention as an economic responsibility of the nation. Crippled children are always objects of sympathy and much is being done toward restoring them to usefulness. Adult cripples, on the other hand, have been regarded as accidents of life, to be helped if possible or supported at public or private expense when adequate means of treatment are lacking, Dr. Archer O'Reilly of St. Louis, declared in an address at the recent convention of the American Medical Association.

Now, however, through the Federal Civilian Vocational Rehabilitation Act, it is hoped that improved facilities may be provided for making the cripple not only more efficient economically but a happier and better citizen. Under the provisions of this act, many states have made a beginning. It costs about $235 to rehabilitate a disabled person and about $300 to $500 a year to maintain one who is unable to work.

From these figures it is easily seen that not only humanitarian motives but economic principles justify rehabilitation of the cripple. In order to secure the highest type of vocational rehabilitation it is necessary to secure the greatest amount of physical rehabilitation. The greatest need at present is for convalescent hospitals in which the disabled person may spend the long period usually necessary for treatment, Dr. O'Reilly said. Memphis, Tenn., has made a beginning with its Hospital for Crippled Adults, but the example has not been followed in many places. There should be convalescent hospitals either public or private in every state and large industrial community, the speaker urged.

The problem of the adult cripple is big enough and important enough to demand these facilities for treatment. The patient must be under the care of physicians trained in the care of crippling diseases and accidents.

Late Summer Hay-Fever

By R. P. Wodehouse

Giant ragweed.

THE expression "late summer hay-fever" will call to the minds of many the goldenrods, sunflowers and other gorgeous components of the waning summer's landscape, for the impression that these flowers must be the cause of their malady has become deeply fixed with many whose sufferings are ushered in with the appearance of such flowers. The term "goldenrod fever" has been popularly suggested to describe the form of hay-fever occurring when the goldenrods bloom, but with only the justification of coincidence in time.

Ragweeds Are Offenders in the East

Most of the hay-fever occurring in the eastern part of the United States in the late summer is due to the ragweeds and their allies. All of them produce large quantities of pollen capable of being carried long distances by light winds. There are nearly sixty species in the ragweed family. The majority of these flower toward the end of summer and, though there is considerable range in size and form of pollen grain in the different species, all possess in a high degree the characteristics of hay-fever pollen. All are light and buoyant, showing no tendency to clump at time of shedding; they are shed in large quantities over long periods of time and, as far as tests have been made, they are nearly all more or less toxic to hay-fever patients. Thus the relative importance of the different species is largely a matter of their abundance and local distribution.

In the eastern states the common, or dwarf, ragweed and its near relative the giant ragweed are found growing in great profusion in roadside ditches and waste places. The dwarf ragweed can be distinguished by its finely divided leaf; each leaf is cut into many segments and each segment is again divided, giving it a fernlike appearance. The plants branch extensively and, when allowed to grow unhampered, assume a pyramidal form 4 or more feet high spreading at the base to 3 or 4 feet. They are so prolific that they are usually found growing in masses of hundreds or thousands together, often forming solid banks of vegetation. Toward the middle of August, they become covered with the greenish yellow flower spikes from which these ragweeds shed their pollen.

The giant ragweed can easily be distinguished by its broad leaf, which is only three lobed or five lobed or not divided at all; the blade of the leaf is carried down the leaf stalk as a narrow wing on each side. It also has the habit of branching extensively just above the ground, forming a more or less columnar bush frequently attaining a height of 12 or 13 feet.

Length of Day Influences Flowering Period

Both species flower at almost the same time, the giant preceding the dwarf by only a few days. Many have observed the precision of the annual recurrence of their flowering period. Unlike the early spring flowers, which are frequently delayed in their appearance for several weeks by cold, rainy weather, the ragweeds are not influenced by weather conditions. It is now known that the principal factor governing their time of flowering is length of day, and thus it is

Marsh elder, New York.

Dwarf ragweed.

Sage-brush.

Giant ragweed, New York.

Cocklebur, Texas.

Sage-brush, Colorado.

Wing scale, Arizona.

that their reappearance can be predicted almost to a day in any given latitude.

The pollen bearing flowers of the ragweed are extremely small and are borne in immense numbers in small heads, which are arranged in long spikes at the top of the plant and at the ends of the side branches, usually standing conspicuously out from the general mass of the bushes. These spiked flowers bear no seeds. Their entire effort is given to the production of pollen, which is shed in such enormous quantities that it rises up like clouds of smoke if the plant is shaken on a still day.

These two species are the only ragweeds found in northeastern United States. They have each about the same range reaching almost across the continent in the northern states and Canada. They are much less abundant in the western part of their range and do not quite reach the Pacific coast. But westerners are not without their ragweeds, for these two species have their counterparts in the western ragweed and western giant ragweed.

The western ragweed is scarcely to be distinguished in outward appearance from the common, or dwarf, ragweed; they are about the same in size and habit but the leaf of the western is not so consistently twice divided and the plants spring anew each year from the same roots, while the eastern form must come afresh each year from seed. In southern California and throughout the Southwest the western ragweed is almost as abundant as the common ragweed is in the East, and flowers at about the same time.

Pigweed growing in western Texas.

How Western Ragweed May Be Distinguished

The western giant ragweed is likewise remarkably similar to the eastern giant ragweed; they have the same general habit and much the same shaped leaf. The western form differs, however, in showing a tendency to branch well above the ground—generally arising from the root on a central stalk—and the leaf blade is not carried down the sides of the leaf stalk, which is thus wingless. The western giant ragweed has a much more restricted range than have the other species mentioned; it is almost entirely confined to the southwestern states, from Louisiana to Arizona.

There are eleven other species of ragweed in the United States, but of these possibly only the lance leafed ragweed is of importance in hay-fever. This species is much smaller than the others and is distinguished by its slender lance shaped leaves, with generally one or more large teeth near the base. It has a still less extensive range, being confined mainly to the central states, where it is known to cause some trouble to hay-fever patients.

Scarcely less important than the ragweeds are the so-called false ragweeds, of which there are probably twenty-five species in the United States. They are similar in general appearance to the true ragweeds and are distinguished from them only on technical details such as their more spiny seed pods. Of these, the slender ragweed and bur ragweed are common in the Southwest and in Colorado; the latter also ranges northward into Alberta and Saskatchewan, where it is abundant in most arid regions, shedding large quantities of pollen during the latter part of the summer.

The marsh elders belong to the same family as the ragweeds and false ragweeds but are different from them, having the pollen bearing and seed bearing flowers in the same heads; they lack the long spikes of pollen bearing flowers typical of other members of the family. Consequently they do not possess so efficient a pollen dispersing apparatus. The highwater shrub or bushy marsh elder is common in tidal marshes along the Atlantic coast. It sheds large quantities of light air borne pollen in late summer, and clinical tests have shown that it is frequently active with hay-fever cases but less so than is that of the ragweed.

Other species of marsh elder, of which there are fifteen—poverty weed, prairie ragweed and rough marsh elder—are found in moist, saline or alkaline soils throughout most of the western part of the United States. They contribute to a certain extent to the production of hay-fever.

Cockleburs Contribute Little to Hay-Fever

The cockleburs constitute another group of plants related to the ragweeds. Fifteen species frequent waste places and impoverished ground. They are coarse, ill smelling herbs with broad, bristly leaves. The staminate flowers are borne in comparatively large spheroidal heads, which are in turn arranged in elongate spikes standing conspicuously above the burs of the seed bear-

ing flowers. The pollen of the cockleburs has been shown to react with late summer hay-fever patients, but the plants are low and shed less pollen than do the ragweeds, and the grains are much larger and less buoyant; hence their contribution to the production of hay-fever is necessarily proportionately less.

The pollen grains of the members of the ragweed family are small. Even that of the cocklebur, one of the largest, is so small that it would take 1,000 laid side by side to reach 1 inch. Nevertheless when viewed under high magnification they reveal characters that are remarkable and beautiful and, to a certain extent, various in the different species, so that it is quite possible to distinguish the pollen grain of a ragweed from that of a cocklebur or of prairie ragweed.

Though there is considerable difference between the grains of the different groups of the family there is also a marked family resemblance. All have the surface covered with minute spines. Compared with the pollen grains of the sunflower and goldenrods, for example, these spines are generally reduced in the ragweeds, false ragweeds and marsh elder and in those of the cocklebur they are virtually absent, being represented only by the merest vestiges. This absence or reduction of spines facilitates the separation of the pollen grains at time of shedding and makes possible their dispersal by the wind; whereas the grains of sunflower and goldenrod cling together by virtue of their spines.

Sage-Brush and Mugwort Are Blameworthy

The sage-brushes and mugworts constitute another great group of hay-fever plants. There are 225 species, of which nearly one third are North American. Generally speaking, they are commonest in the arid and semiarid regions, reaching their greatest abundance in the Rocky Mountain states. The best known and commonest of these is the ordinary sage-brush. It is extremely abundant on the western slope of the Rocky Mountains and in the Breat Basin. In some places the dusty gray green sage-brush plants are the only living things the eye can see for miles across the deserts.

Ordinarily sage-brush reaches a height of only 3 or 4 feet but under favorable conditions it may attain to 12 or 15 feet, assuming the form of a small tree with a fair sized trunk distinctive for its shredding reddish bark. The tree form is most commonly found in mountainous regions, where it sheds enormous quantities of light air borne pollen, which produces a type of hay-fever known locally as mountain fever.

Of equal importance is the common mugwort, a herbaceous species that in its many varieties is found almost throughout the North American continent. One form of this species, known more especially as prairie sage, is common in the prairies of British Columbia, Washington and southward; another slightly different form is common in the foothills of the mountains. Of the many other species perhaps the most important are the California mugwort and hill sage, both common in the Pacific coast states and in these regions serious causes of hay-fever, and the silvery wormwood, which is widespread throughout the arid regions. In the Mesilla valley in southern New Mexico the silvery wormwood is a troublesome cause of hay-fever.

The grains of the pollen of all species of mugwort and sage-brush are perfectly smooth. Only in a few species can the smallest vestiges of spines be seen, which thus hark back to the relationship of these plants with the sunflowers and goldenrods. In respect to the reduction of spines on their pollen grains it may be said that they are considerably more advanced than their cousins the ragweeds. In all the sage-brushes and mugworts the pollen is light and shed in large quantities, possessing to a marked degree the characteristics of hay-fever pollen. There are so many species and varieties involved, however, that any adequate consideration of them would be beyond the scope of this discussion. For a detailed account of the group and their relative importance in hay-fever the reader is referred to the work of Hall and Clements published by the Carnegie Institute.

Among the Compositae are many other species which, like the goldenrods, sunflowers and dahlias, may at times produce some hay-fever symptoms but are frequently charged with much more than is their share. The pollen of all these is covered with long, sharp spines and is waxy, so that when shed the grains nearly all remain clumped together and can get into the atmosphere in only limited amounts. They can scarcely be counted as factors in hay-fever unless brought in close proximity or actual contact with the sufferer. The pollen of such species frequently gives some reaction by the cutaneous test with ragweed patients, but this is probably solely on account of their biologic kinship with the ragweeds.

Tumble-Weed Is Hay-Fever Menace

The groups of the chenopods and amaranths also contain many hay-fever plants. One of the worst of these is Russian thistle, or tumbleweed. It is of wide and ever increasing distribution already covering nearly the whole of the United States. It is mainly in the western part of its range that it reaches its best development and becomes a hay-fever menace.

Russian thistle must not be confused with the true thistles with which it has no kinship but to which it bears a certain resemblance in the sharp spiny tips of its leaves. The plants branch excessively with long, slender branches, formed

in such profusion that they fairly mat together. When fully developed they form compact, dome-shaped and prickly bushes, which give off large quantities of pollen from July to September. After September they begin to dry up and

Pollen grains of Russian thistle, western ragweed and sunflower.

finally, breaking off at the root, they are rolled about the plains by the winds, distributing their seeds as they go, until they become entangled in a fence or some other obstruction, where they frequently accumulate in great masses. In eastern Washington and in Oregon, Idaho, Montana and Wyoming, Russian thistle is regarded as the worst of all hay-fever plants. In the eastern part of its range, it is comparatively harmless.

Also belonging to the chenopod family is the group of salt bushes, of which the desert holly, much used for Christmas decorations, is a well known but harmless example. Many other species are important contributors to the production of hay-fever. For example, the annual salt bush is said to be one of the worst causes of hay-fever in southern Arizona. Also important through much of the Southwest are red orach, silver scale, all scale and shad scale. These and the many other species inhabit mostly desert and semidesert regions in which the population is sparse and scattered. Were it not for this fact it is likely that these plants would cause much hay-fever, for the pollen of many species has been shown to be toxic to hay-fever patients.

A close relative of the western salt bushes is greasewood. It is particularly abundant in saline situations in the Great Basin region, where it is often associated with sage-brush. It is generally a large, spiny, sprawling shrub, 4 or 5 feet high or occasionally much higher, with small, narrow, fleshy leaves. The pollen bearing flowers are borne in small conelike inflorescences standing upright at the ends of the spiny twigs. They shed large quantities of light air borne pollen from May to September. Greasewood is not regarded as a serious cause of hay-fever, though its pollen has been shown to give cutaneous reactions with hay-fever patients. There are other plants of the chenopod family, such as lamb's quarters, winged pigweed and poverty weed, that in some localities are of importance.

Among the amaranths the western water hemp is regarded as one of the worst hay-fever plants when it is abundant. It is a tall, branching, coarse weed frequenting swampy or moist soils. The pollen bearing flowers are borne in long, slender or slightly drooping spikes, shedding large quantities of light air borne pollen from July to September. Fortunately its range is restricted, being confined for the most part to the states of the Great Plains region. Similar to western water hemp and closely related to it are the various species of amaranth. These are mostly coarse weeds of gardens and ditches, as red root pigweed and careless weed, frequent causes of hay-fever in the Southwest.

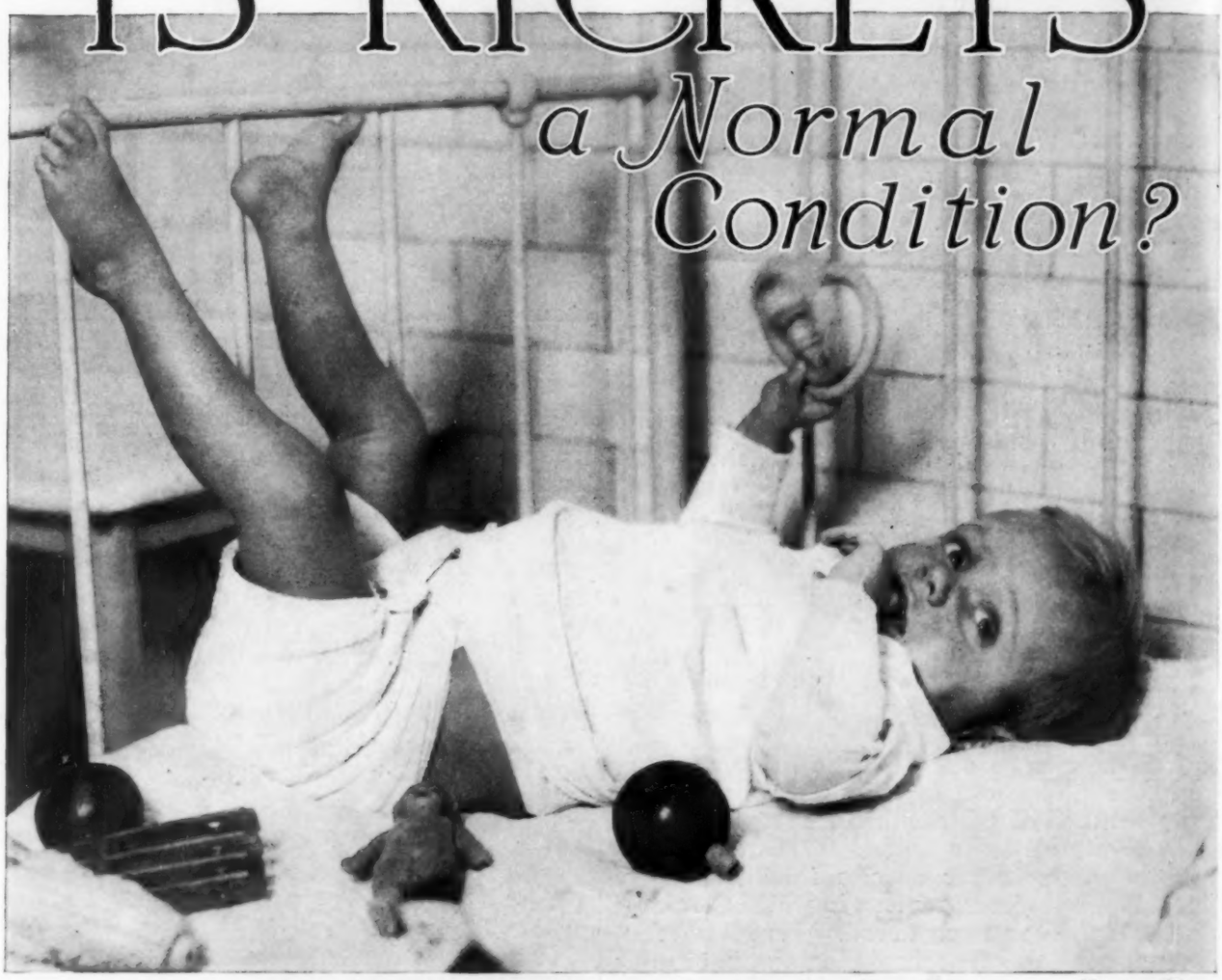
The pollen of all of the chenopods and amaranths, in keeping with their wind pollinated habit, is of small grains. These are unlike those of the plants of the ragweed family; instead of having three germinal pores and the surface covered with regularly arranged spines, they have no trace of spines, but have instead many round pores distributed over the surface, giving a sievelike appearance. The number of pores is different in the different species, varying from fourteen or sixteen in the grains of greasewood to about fifty or sixty in the grains of shad scale.

Just how finely specific it is necessary to be in the diagnosis and treatment of hay-fever from the plants mentioned in this and previous articles is still an open question. Hall and Clements, in speaking of the common mugwort, which, as regarded by them, includes fifteen

Russian thistle growing along an irrigation ditch in southern Arizona.

subspecies, almost all of which are considered as separate species by other authors, say: "Preliminary studies indicate that the pollens of the different subspecies all react alike. Therefore in testing and treating hay-fever cases, the specialist need pay no attention to the complicated series of subspecies and minor variations."

IS RICKETS a Normal Condition?



Keystone View

Cod liver oil and sunshine are preventives of rickets.

By Olive Swanson

IT HAS been estimated that more than 90 per cent of the children in large cities suffer from rickets. The intimate association of rickets with growth, its early appearance regardless of season, and its universality raises the question whether this slight degree of rickets must not be considered normal.

In 1650 Francis Glisson published the first adequate description of rickets. The condition had appeared in the counties of Dorset and Somerset in England about thirty years previous to his writing and had been called rickets by the country people. They derived this word from the old English verb "wrikken," which means to bend or to twist. Even though the name was expressive of the bow-leg and other deformities that follow rickets, the term did not satisfy Glisson. He christened it "rachitis," a word that he derived from the Greek words for spinal diseases. Rachitis is the name that many doctors use for the disease as it is seen today.

As a matter of fact rickets was really not a new disease in the seventeenth century. We know that children must have had it in England before the Romans came. The skull of a child who lived in the bronze age shows definite signs of rickets.

Rickets is a nutritional disease. The specific failure of nutrition has to do with a deficiency of calcium, or lime salts, and phosphorus. It cannot always be said, however, that children who suffer from rickets do not receive a proper amount of these substances in their food, for in some cases it is known that the food of chil-

dren suffering from rickets contains entirely adequate amounts of these substances, and in other cases it is found that in diets in which calcium and phosphorus were not originally present in sufficient quantities the addition of sufficient amounts of these salts to the food does not result in the checking of the disease. There must, therefore, be some other factor or factors of diet and hygiene involved, and the evidence gathered from experiments that have been carried on in the last few years points to a certain group of nutritional substances, the vitamins, as being the ones involved. Vitamin D is the regulator of the calcium and phosphorus balance.

As the result of an inability properly to use calcium and phosphorus, the bones of the growing child become soft, and when this happens they bend easily and are readily deformed, especially when the bones have to support weight. It is, of course, the deposition of calcium salts that makes bones rigid and hard.

Usually Affects Bones of Arms and Legs

Rickets may affect all the bones of the skeleton, but usually the ones involved are the long bones, such as those in the arms and legs. The ribs and skull are also commonly affected, and the teeth. When calcium salts fail to be deposited and the bones become softer and more pliable, any influence that exerts pressure, such as the force of the body weight or muscular activity, will gradually bring about bending and deformity. This is seen in bow-legs sometimes of extreme degree or in deformity of the chest where the ribs join the breast bone.

Sometimes the bones become so soft that they break, and in certain types of advanced and severe rickets it becomes necessary to put children to bed in plaster casts in order to prevent broken bones or serious deformities due to unusual degrees of bending. Often rickets causes softening of the teeth, leading to decay of existing teeth and tending to make the teeth of the second dentition faulty in structure.

Children suffering from rickets become pale. That this pallor is often a sign of anemia is shown by the fact that the number of red blood cells and their coloring matter, hemoglobin, is also diminished. Rickets is not usually accompanied by loss of weight. Children suffering from this disease often appear well nourished although their muscles and skin may feel flabby. If any two groups of infants show the need of early antirachitic treatment more than others, they are the large, rapidly growing, breast-fed infants and premature babies.

Acquired from Second Month to Fourth Year

Children suffering from rickets rarely acquire it before the second month or after the fourth year. This is the period of high susceptibility to rickets. Rickets has been found in the first month but never at birth.

Children who suffer from rickets are apt to be delicate children. They are likely to develop certain forms of respiratory diseases such as colds, bronchitis, pneumonia and also tuberculosis. In fact, such diseases, when they complicate the underlying conditions of rickets, probably produce more fatal outcomes than does the actual rickets itself.

It has been thought that rickets was a relatively rare disease, common only among the lower classes. But this is not the case. In large and more or less congested communities the rich as well as the poor suffer from this affliction. Investigations carried on in New Haven, Conn., have shown that a slight degree of early rickets is well nigh universal in northern climates.

Relatively fewer cases of rickets are found in rural communities than in cities. The probable explanation of this fact leads directly to the consideration of one of the important factors concerned in the treatment of rickets. This factor is sunlight or even

Pacific and Atlantic

Rickets never had a chance with these sturdy little children of the sun.

ultraviolet rays artificially produced. If the antirachitic dietary requirements are met and if the uncovered skin is properly exposed to the direct rays of the sun, a great improvement is usually obtainable in the condition of the child suffering from rickets; many times a cure results. It certainly would seem that ample exposure to the sun's rays does much to prevent the development of rickets, because it seems that this disease is practically unknown in the tropical countries where the sun's rays are more intense.

Negro Children More Susceptible

The well known fact that negroes living in the temperate zones are likely to develop rickets is interesting, particularly in view of the fact that when treatment by sunlight is applied to large numbers of children of any community the members of the negro race, in contrast to those of the white race, show a lesser degree of improvement and require correspondingly larger doses of light to bring about beneficial results. The pigment of their skin is more resistant to the effect of rays of light than the less pigmented skin of the white races. The stronger rays of the sun in tropical climates will, however, protect the possessor of a black skin.

A few minutes' exposure to the ultraviolet rays of the sun increases almost twofold the phosphorus in the baby's blood in a few weeks' time; it also increases the iron content.

Not only does sunlight have an effect on the body in preventing rickets, but foods exposed to the sunlight have an antirachitic potency. Foods that contain a small amount of the antirachitic vitamin develop considerable quantities of it under exposure to the sun. The calcium and phosphorus content of milk is said to be greater in pasture-fed cows than in those that have been fed indoors.

Cod liver oil and ultraviolet rays exert a great influence in the cure of rickets. The beneficial results of this oil have been attributed to the fact that it contains the fat soluble vitamin D. Both cod liver oil, which contains vitamin D, and rays from the sun are capable of altering the improper balance between calcium and phosphorus that exists in rachitic children. This improper balance of calcium and phosphorus may be a deficiency of either one or the other or a deficiency of both substances.

Various health agencies in all the larger centers of population are struggling to educate the young mother in the proper care of her children.

Rickets Should Become a Rarity

It would seem to be a simple procedure to safeguard the children of today from rickets since sunlight and animal fat are fairly easily obtained. But as a result of ignorance, indifference, unwillingness to follow advice, and the great difficulty of getting a proper amount of sunlight, the residents of the poor tenement districts present a great problem.

With the abolition of extreme overcrowding in the poorer districts of large cities, and with the thorough spread of information concerning the ways of preventing rickets, this disease should become a rarity rather than a condition affecting the great majority of our children.

Coming in October

SLATED for the October issue of HYGEIA are the following interesting topics, discussed authoritatively and entertainingly:

THE FOOD WE EAT
By Julius Friedenwald, M.D.

BROKEN MINDS OF YOUTH
By Charles W. Burr, M.D.

STUTTERING—A STATE OF MIND
By Walter Béran Wolfe, M.D.

THE BOWLING GREEN
By George H. Dacy

BROWN JUG
By Ralph G. Demaree

The Richardson series on the runabout child, the Gardner series on the teeth and the Myers series on the contributions of tuberculous physicians continue, as do the departments and special articles.

WHEN YOUR CHILDREN HAVE MEASLES

Don't Keep Them in the Dark

By B. Franklin Royer

AMONG the earliest warnings of an oncoming attack of measles is the reddened condition of the eyes. Tears may be noted as excessive and almost ready to overflow the lashes during the stage of sneezing and coughing that precedes the skin eruption of measles. These early inflammatory warnings in the eye require no treatment. They are usually accompanied by some fear of light and this fear of light has prompted the vicious care that is responsible not only for loss of eyesight but also for the loss of life of many children.

Fresh Air and Good Light Imperative

Probably more harm has been done by the old-fashioned notion that the child with measles must be kept in a dark room than by any other single nursing fault. The fact that the tears are flowing and the eyes are a little congested is not a sufficient reason for putting the child in a dark room. In no other disease of childhood are fresh air and good light so imperative in treatment—fresh air to avert and counteract lung infection, the thing that kills those babies and children lost from pneumonia; and good light to help kill the germs of pneumonia and other germs often responsible for the serious eye conditions developing as a later complication in measles.

Until a few years ago many doctors of medicine may have recommended that the sickroom be darkened when nursing care was being given in measles or may have continued giving medical care in the room which the mother or nurse had already carefully darkened.

I have recently looked over the recommendations for eye care during an attack of measles made by the authors of a number of textbooks on children's diseases. The later editions nearly all declare that open windows and fresh air are imperative, and some of the recent publications even feature the fact that a dark room is undesirable; but even these physicians who specialize in children's diseases have seemed a little hesitant about entirely disregarding the fear of light notion passed on from their grandmothers.

Let us reason together a bit as to just how the light causes distress and how the light should be admitted to the sickroom of the child suffering with measles.

Germs Thrive in Darkness

If you recall your own experiences when your eyes are a bit irritated, you will remember that as long as your back is toward the window the light does not greatly distress you. It is when you face toward the window that the pain and discomfort are caused. When you face a bright, unshaded lamp or electric bulb you are a thousand times more uncomfortable.

Mothers, and sometimes even the attending physician, have fallen into the error of taking the easiest way of making the child's eyes com-

fortable by darkening the room, without thinking that they were possibly doing the child irreparable harm in shutting out full daylight and fresh air, and without realizing that they were actually creating a condition most favorable to the growth of the germs that are commonly found in the highly inflamed eyes of children who are suffering with measles.

Bacteriologists have perhaps not put enough stress on the fact that the pneumonia germ and other germs commonly found associated in measles grow best in darkness or semidarkness. Any one realizes that inside the chest all is darkness. There in the lungs all the organisms so commonly found in measles grow best and cause great ravages. In laboratories it has long been known that to get the most luxuriant growth of these germs one must darken the incubator. Is it not logical to surmise that to get the greatest growth of these germs in the measles sufferer one should darken the room? Does it not seem entirely reasonable then that darkening of the room is a procedure that may become a real menace to the eyes because of favoring the growth of the germs of greatest danger to the eyes? Let the daylight in!

TO AVOID EYE COMPLICATIONS DURING MEASLES

1. *Banish fear of light in the measles sickroom.*
2. *Seek eye comfort with adequate light and an abundance of fresh air.*
3. *Strive for extreme cleanliness.*
4. *Place the head of the child's bed toward the window.*
5. *Arrange artificial lighting equipment so that during the few hours that artificial light may be required no possible glare may annoy the patient.*
6. *Follow out the physician's directions to the letter.*

Brief Cold Applications to Eyes

Now there are many things that may be done in the course of an attack of measles that might be considered as reasonably good eye care. Probably there is nothing so soothing and comfortable in the early stage of measles when the eyes are inflamed as the laying on the eyes of little pledgets of cotton that have been taken from cool water. These should be kept on the eyes for just a few minutes at a time. A great many specialists in the diseases of the eye feel that in any early stage of measles it is inadvisable to use long continued cold or ice-cold applications and to exclude the light for too long a period.

If pus is seen in the corners of the eyes at any time in measles, the most careful cleansing is advised. The doctor will perhaps advise for this purpose a boric acid solution, 3 per cent in strength, in freshly boiled, or preferably distilled, water heated to the temperature of the body. This solution is inexpensive and with a bit of absorbent cotton may be applied either by first washing the lid margins until every bit of soilage is removed from the lashes and skin, or by squeezing the drops of the boric acid solution from the cotton and flushing them over the eyeball and inside the separated lids.

A particular line of procedure must be followed, however. In washing and cleansing the eyes in this fashion the head should be turned first to one side and then to the other so that by no possible chance can the material that is washed out of one eye flow across the bridge of the nose and into the other eye. The attendant must be careful to use a different piece of cotton for each eye and for each procedure and to see that it is not dipped in the solution again after it has been used. In addition to using separate pieces of cotton for each eye, the caretaker should wash the hands thoroughly before and after taking care of one eye before touching the other. There is a good reason for this sort of procedure—the germs causing trouble in one eye may not exist in the other—and the entire nursing procedure must aim to avoid trailing infection.

Nothing stronger than boric acid solution should ever be used in the eye or about the lids, except under medical advice. The eye complications of measles require most careful medical supervision.

Put Head of Bed Toward Window

Remembering what was said about the comfort afforded the eyes by having one's back to the window, you will at once see that the bed in the average chamber is not placed in relation to the source of light with due regard to eye comfort. As nearly as possible you should have the head of the child's bed toward the window. This will give light in the child's face without the direct rays striking the eye in such a way that they cause pain. With the bed well placed, the light rays strike the eyes almost at a right angle, instead of coming straight in. The eyebrows and the bony arch above the eye socket all give protection.

If there should be too much tearing with the head in this position, it is a simple matter to place a dark screen near the head of the bed, or a simple eye shade on the forehead, if the child

is not annoyed by it. Most specialists in diseases of the eye consider dark glasses a menace, so their use is inadvisable.

Fresh air, plenty of daylight, cleanliness—these are the things that count in the care of the eyes early in the disease.

When Severe Complications Arise

Eye conditions are apt to arise, however, in certain later stages, especially among children having severe types of measles, when more definite medical treatment must be given. When fever continues for a long time, as in lung or other severe complications, the supply of tears may be affected adversely. Because of the rapid evaporation of tears during the high fever and of the inadequate flow of tears due to the fever, the eyeball itself sometimes becomes too dry. Nature's little fountain at the top of the eye sometimes fails to secrete enough tears.

These dry eyes and dry lid margins and lashes require the most skilful care on the part of the medical attendant and nurse. With some measles patients, when tears are not flowing well, it becomes necessary to irrigate the eyes frequently; often it becomes necessary to lubricate artificially the margins of the lids because nature's oily secretion is not being properly provided during the fever.

Good daylight enables the nurse to observe these early indications of eye trouble. Immediate report to the doctor is imperative.

In this stage of measles with eye complications feared, the doctor often orders soft, moist cotton compresses frequently applied for short intervals, in addition to the irrigation. When such care is essential he directs what the nurse shall use and how to apply the ointment he may prescribe for the lid margins. The doctor knows that the undernourished child, the child who is not taking proper quantities of nourishing food during this stage of measles, is the one apt to suffer most severely from eye or other complications of measles.

Sometimes a mother asks, "May not my child's eyes become crossed during measles?" If I should reply, "If they do it is your own fault," her feelings would be hurt. Measles is not a cause of crossed eyes. Too early use of the eyes at close range and for too long a period of time after any illness, when the eye muscles are relatively as weak and flabby as are all other muscles, has been responsible for muscle faults of thousands of children's eyes. The fault often first becomes noticeable during convalescence.

Should Limit Books and Toys

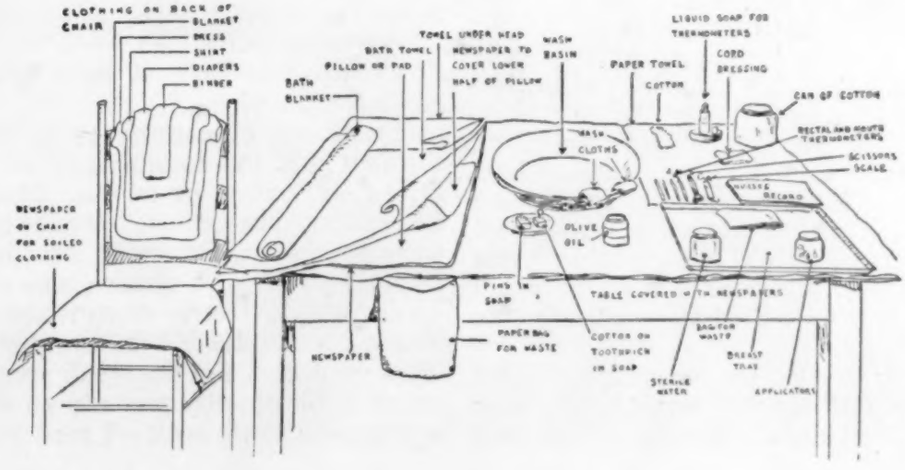
Because the child is in bed, and is a little restless and anxious to be amused, parents often overcharge his weak eye muscles by giving him books and toys that permit him to use his eyes at close range longer hours every day than if he were well and out at play.

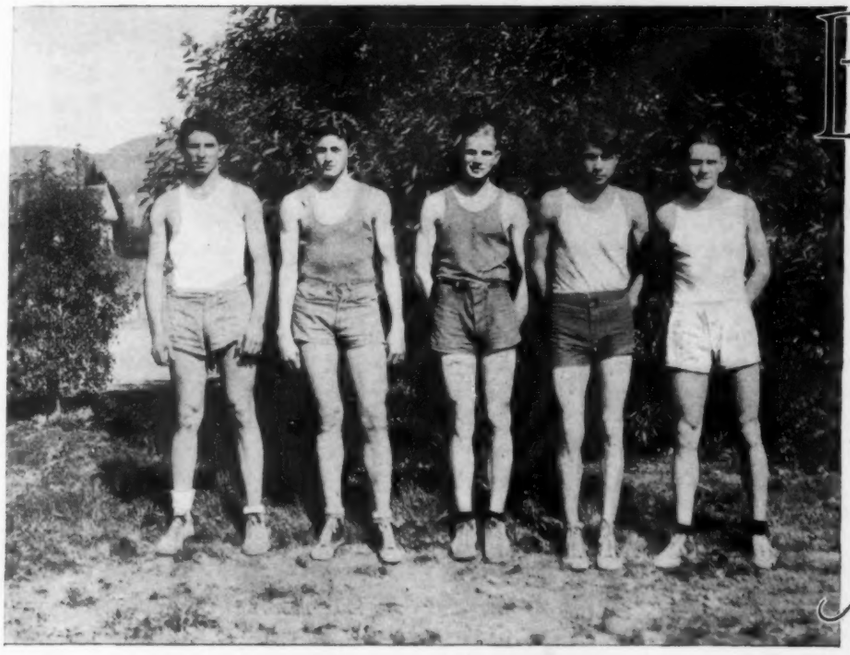
The use of the eyes for close vision should be minimized and fond aunts, uncles and friends should be prevented from overloading the sick child with temptations in the way of books, toys and trinkets that will encourage him to use his eyes more than is usual.

If, in addition to the precautions suggested in the early stage of measles and during the fever stage, these precautions are observed during the stage of recovery, say for a period of a month or six weeks after the child has suffered from measles, then parents will have given the child a square deal, so far as his eyes are concerned.

A Plan for the Baby's Bath

As worked out by the Visiting Nurse Association, Cleveland





Building Healthy Boys

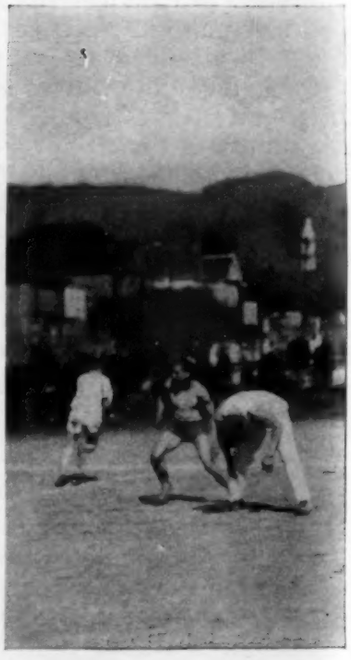
By Alfred E. Parker

Five boys at Berkeley High School, picked at random, showing the average physical development of a high school senior under a "play program" of physical education.

BEFORE the war most Americans held two opinions about the health of our young men. One opinion was that they were the healthiest on earth; and the other was that our finest specimens of physical manhood came from the country and not from the city. When the war came, the first of these two opinions was toppled over. Most of our young men were healthy, but they were not nearly as healthy as their admiring elders had boasted. The second opinion was completely swept aside by proof that our healthiest young men came, not from the country, but from the city.

This second disillusionment came as a bewildering blow to most Americans. The boy from the country, working out in the open, building his muscles chopping wood or following the plow, was just naturally healthier and stronger than the city boy. The city boy did not have half a chance to be healthy. He lived either in a dark, insanitary attic or in a steam-heated apartment. He had no chance to breathe pure air; his opportunities for visiting the country were few. There were, of course, before the war, some playgrounds; there were gymnasiums in a few schools and in the Y. M. C. A.; but it never occurred to many of us then that these artificial means of exercise could even approach the healthful, outdoor life of the country lad. We held all these opinions and then—the war.

Of the millions drafted for the war, one third were physically unfit for war service. Physical defects among this multitude of rejected men varied. Some had flat feet; some had defective eyesight; some had defective hearing, and some were in such poor health that the army or navy could not afford to spend the time or the money to make them sufficiently strong to carry a rifle. Invariably, the larger percentage of men physically unfit for war service was found among young men from the country.



A game of touch-football.

Two outstanding reasons can be given for the physical unfitness of country men. Paramount is the fact that the country boy seldom received medical attention or advice. Many men from the country had infected tonsils and adenoids; their eyesight, which could have been corrected in early youth with glasses, was often found to be seriously defective when tested for the army. When disease did hit the country man, it went hard with him, for the weak spots in his body reduced his vitality to such an extent that he was unable to throw it off readily.

The second reason for the country man's physical unfitness was the lack, before the war, of physical education in any of the country schools. It sounds well to say that chopping wood or following a plow builds a strong body. In many cases a strong body will result but the body needs a variety of exercises to make it strong throughout. Exercise such as a boy on a farm received often developed one set of muscles to the exclusion of another set. A rightly administered physical education program develops all the muscles of the body, building not a one-sided physical body but an all-round physical body.

The Berkeley High School System

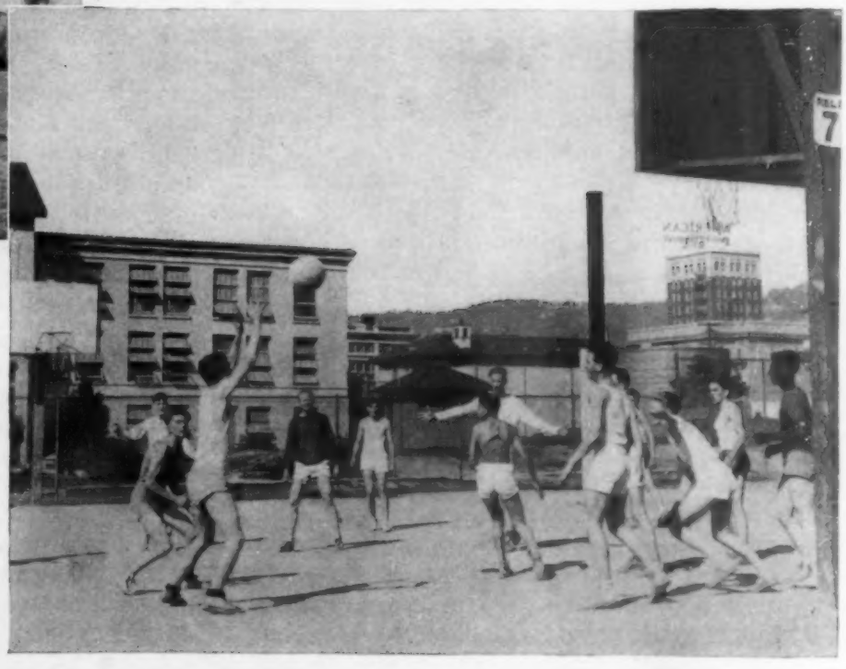
Immediately following the war state legislatures began to consider the facts so forcibly brought to our attention when we began to check up on the physical condition of our men. Several states passed laws making physical education partially compulsory; and California passed a compulsory physical education law requiring a certain amount of physical exercise each day, varying from a small amount during recess in the elementary schools to a forty minute period every day in the high school. The system as developed at the Berkeley high school, Berkeley, Calif., is referred to in this article not because of any partiality but because this high school, having equipment and instructors, was chosen as a school well adapted for experimentation in the building of healthy boys.

Play Method Is Popular

Those in charge of the physical education department at Berkeley high school built their program on the opinion that play activities build healthier bodies than formal gymnastic work such as calisthenics and drills. They arrived at such an opinion for the reason that play activities bring into action the big muscles of the body. Play is a natural instinct of youth; it is something boys enjoy and enjoyable body action is always more beneficial both to body and mind than exercise participated in against the will. There is no questioning the fact that a sound, well built physical body can be developed by calisthenics. But when large groups are to be handled such a development is hardly to be expected, for it is next to impossible to have 200 boys, for example, all of the same mental attitude.

Boys who have experienced both the play method and the formal method of physical education are not slow in telling which they prefer. Boys love play. It is as natural to them as breathing. Young people know that drillwork and calisthenics are artificial and, while they may not speak their opinion, they show by their actions exactly what they think of formal work. Is it strange that boys speak of formal physical education as "physical torture" and that they speak of play only in terms of praise? Play

Note how the leg muscles are used.



A basketball class at Berkeley High School caught unawares. Note how the muscles of the upper and lower part of the body are brought into use.

gives youth a chance to release a storehouse full of energy.

Building up the play method of physical education at Berkeley was a hard task. It was hard to classify boys and girls into play groups in which ability was nearly equal. A weak, sickly boy could not be expected to keep up with a star athlete. Some method of segregation had to be established. While the system as used today is not entirely satisfactory, definite progress has been made toward determining groups of equal ability.

When a boy enters high school he is put through the functional tests. The functional tests consist of the half-mile run; fifty-yard dash; high jump; pull-up; breath holding; posture; age, height and weight, and the pulse test. A boy's record in the functional tests reveals physical ability and organic weakness.

A boy who falls below the average in all the functional tests or who has a physical defect is assigned to a special corrective class. In the special corrective class, the defect can often be cured and by individual instruction ability to compete in games is brought up to that of the average boy.

All Boys Examined, Parents Permitting

Functional tests are also used as an aid in helping the health department check up on those who should be examined by the physician. It often occurs that a boy should not take exercise at all for a certain period, such a situation necessitating his being assigned to "rest gym." Before the semester is over the health department examines all the boys who bring written permission from home. An ideal situation would be to examine all the students of a school but health administrators are not permitted to examine all pupils without parental permission except in cases of contagious disease. Nevertheless, the majority of parents are quite willing that their boys be examined.

The physician, being qualified to give a more extensive examination than the physical education instructor, is able to read a boy's health barometer. When cases of infected tonsils or adenoids, poor eyesight, bad teeth or weak hearts are found, recommendations are made that the family doctor be called in for immediate consultation.

It is in this work of examining students and finding out their true physical condition that the helpful work starts in building healthy boys. Before the war lack of physical examinations by doctors put the country boy at a tremendous disadvantage. Without the preliminary physical examination, any program of physical education would be a failure. How foolish it would be—such foolishness still exists in some schools—to allow a boy to take part in strenuous games if he has a weak heart! Neglected weak hearts can be permanently injured by lack of proper care, which is a crime if it is allowed to go on under the eyes of intelligent teachers. In one way there is complete control of physical examinations at Berkeley. No boy is allowed to compete on an interschool athletic team unless he passes a thorough physical test given by the school physician.

Final segregation for the physical education program takes place when the boys are organized into squads for competition in play activities. This may be done by lining up the boys according to height and choosing squads of equal height; or it may be done according to weight. Neither method is entirely satisfactory if the class is too large.

Play every school day without any instruction on how to care for the body would surely be an inadequate physical training program. During the first two years of high school one day a week is delegated for instruction in anatomy, physiology, first aid and hygiene. This instruction is so planned that the boys learn in anatomy and physiology courses something of the organs of the body; in first aid work they learn how to care for the body in time of accident, and in hygiene they learn the rules of health that are necessary throughout life if a sound body is to be maintained.

Realizing that the body is not entirely physical, the boys are shown that all-round development should include mental and moral progress. Play develops a keener mind, as quick thinking is required and the rules of sportsmanship aid toward establishing a moral code. No moral code can long exist that does not include (without practicing) the basic principles of sportsmanship.

Carry-On Sports Are Taught

No program of physical education is considered complete without instruction as to the value of learning a carry-on sport. A carry-on sport is a sport—such as swimming, golf, tennis, horseback riding, hiking or bicycle riding—that can be participated in throughout life. Suppose, as often happens, that a boy finishes his schooling skilled only in basketball and football. Enjoyable sports while in school! Yes. But will this boy be able to secure his exercise from basketball or football fifteen years after he has left school? While the boy may not know it at the time, a one-sided physical training program is cheating him out of future enjoyment and future health. So the program at Berkeley tries to build healthy boys now and it also seeks to point the way to health throughout life.

Carry-on sports make up the majority of activities in the intramural program. The intramural program as planned seeks to provide after-school games for those boys who are not out for a school team and who do not have the

A boy who has a physical defect is assigned to a special corrective class. The defect can often be cured and by individual instruction his ability to compete in games is brought up to that of the average boy.

opportunity to experience competition between schools. Well organized groups within a school furnish a basis for keen competition and keen competition is a vital experience for every youth, for in such a situation a chance is given to display the physical, mental and moral sides of life in action. Intramural athletics has saved the situation for boys who are anxious to participate in hotly contested athletic games.

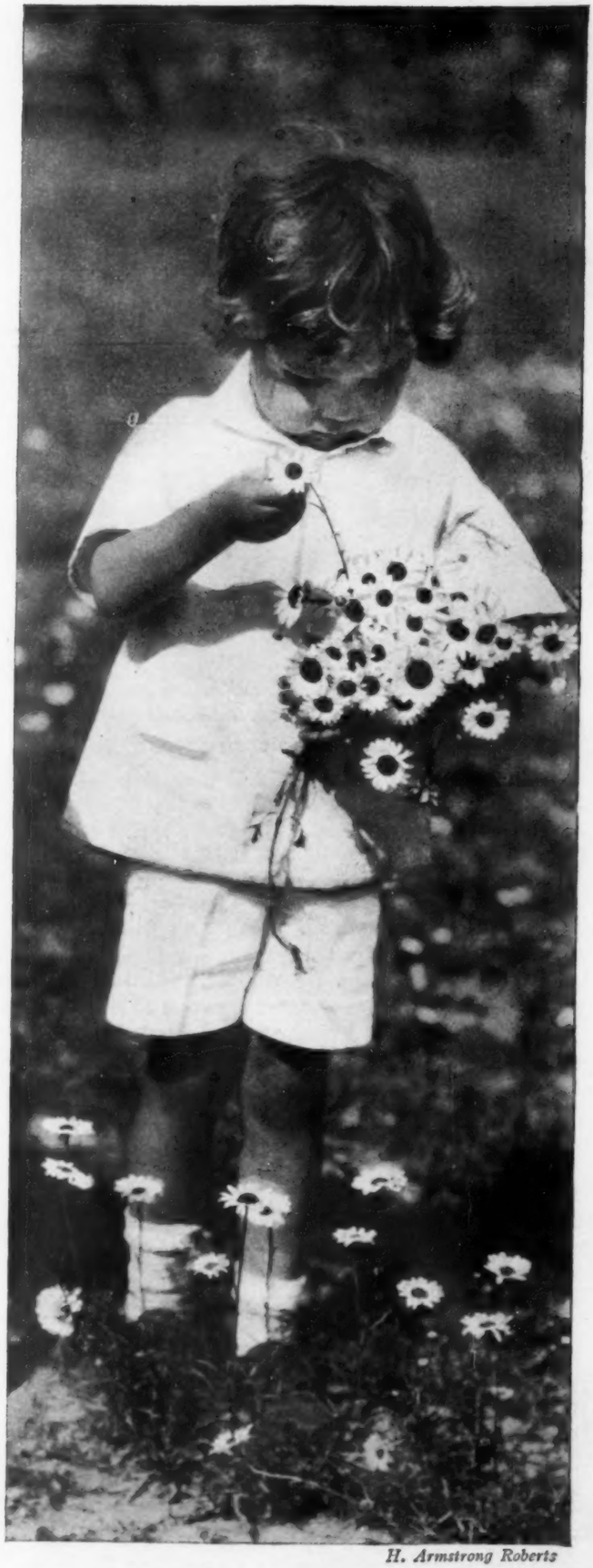
What place, then, does interschool athletics have in a physical training program? A most important place indeed. Interschool athletics affords a partial outlet for those boys of apparently limitless energy. Boys of natural athletic ability crave playing in interschool competition. If they are deprived of such competition, they will turn their energy to some other channel, which is too often the channel of mischief. Boys under the direction of trained coaches, who are teachers first of all, are far better off than they would be if allowed to roam the street after school.

In interschool athletics a boy learns to give and take. He learns the sweet taste of victory and the sour taste of defeat. He learns to be glorious in victory and glorious in defeat. Athletics teaches the boy, as well, that some one else exists besides himself; athletics also builds stronger bodies.

That some boys do not take part in either intramural or interschool athletics has to be granted. For such boys two possibilities exist for engaging in athletic competition. One possibility—the physical education class—is unavoidable, being required by law. The other possibility is the playground.

The play method of physical education is popular. There is a carry-over into after school hours that keeps hundreds of boys occupied every day in their leisure time. What could be done with the hundreds of boys, all self-charging dynamos—and there are fourteen hundred at Berkeley high school—should after school athletics suddenly be stopped? One big step toward keeping young people out of mischief and crime is to fill their leisure time with more opportunities for play and participation in athletics. Games afford equally as many citizenship-making situations as any classroom.

But this article is strictly about building healthy boys. It is rather doubtful if just one period of physical education a day produces our healthiest boys. Indeed, it affords sufficient exercise to keep the body running in fine shape, but boys crave and require a lot of exercise. Physical education guides the way for all youthful energy and in this it is doing its greatest service to young people. Physical education instructors interest boys in games for their leisure hours; and they teach them how to care for their bodies so that they can buck hardships and still keep themselves healthy.



H. Armstrong Roberts

We cannot make a Shakespeare out of every child; neither can we make a Dempsey. But we can with few exceptions make a self-respecting citizen who will fill his place in the world well.

Three Things Every Child Craves

By G. H. Estabrooks

MENTAL hygiene these days is stressing a new point of view, new in the last twenty years. A child is not born vicious or nervous or quick tempered or selfish. These are traits of character, and modern psychology seems to be coming more and more to the conclusion that Johnny is selfish or nervous because he finds that it pays. His associates, more especially his parents, literally teach him that the most certain method of getting what he wants is to develop nerves, or a quick temper, or tantrums, and Johnny responds to the teaching.

I addressed a mothers' club one afternoon, the members of which were obviously above the average in intelligence, were definitely interested in my subject and were anxious to follow the right course in child training. I outlined a few fundamental principles of the mental hygiene of childhood. Especially I emphasized the dangers of discussing a child's shortcomings in front of him.

Don't Discuss Child's Faults before Him

After the meeting I walked home with one of the members, who had two children, Johnny, aged eight, and Betty, aged five. The mother was obviously worried about Johnny, who, she said, was rather dull at school, was inclined to be disobedient and was somewhat of a problem in general. We met the two children and the mother immediately began somewhat in this style, the two children listening:

"Now this is Betty. She is really a nice, obedient little girl and gets good reports from school. Everybody likes her and she makes friends with every one. But Johnny is different.

I can't understand him. He doesn't do at all well at school and he is disobedient around the house. He just can't seem to learn anything and is always in trouble."

This, after a lecture in which the identical point had been stressed ad nauseam. When the children had left the room I tried tactfully to reemphasize my point. I hope that I succeeded, but it is doubtful.

Perhaps the following simple outline of the forces underlying the normal development of a child's personality may be of use. The scheme is simple and leaves gaps that are apparent to the psychologist, yet it probably presents useful suggestions.

Three dynamic urges that underlie a child's conduct are of particular interest to us. Every child seeks affection. Every child also demands attention; he wishes to be the center of interest at times. Finally, every child has a desire to be master. At times he becomes contrary and shows a definite tendency to assert himself—to be disobedient and insist on his own way.

Let us then consider these three as the basal dynamic drives underlying the character of a child.

1. Love of affection.
2. Love of attention.
3. Love of power.

Every normal child wants these things. He works for them and, as far as he can be said to plan, he plans his life so as to get them. To be sure his planning is pitifully short sighted from the adult point of view, but he is only a child. However, we can be certain of one thing, child or no child, he will gratify them in one way or another.

In Search of Affection

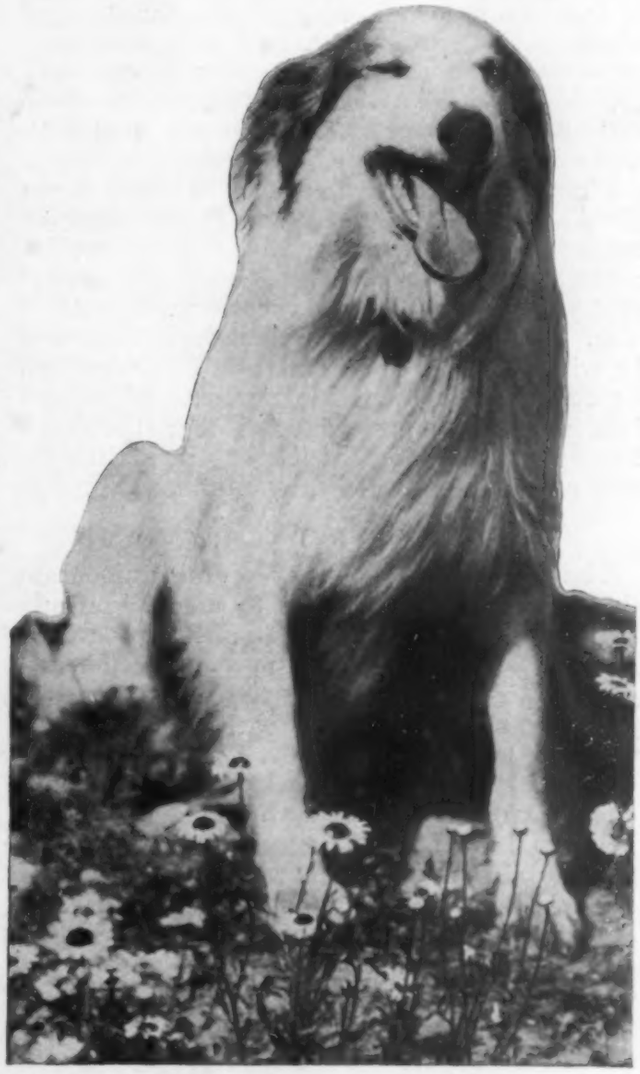
There are two ways of gratifying any of these drives. They can be satisfied either in reality or in fantasy. For instance, every child desires affection and will get it. Needless to say, the normal place for a child to receive affection is in his home from his parents.

Now let us suppose that Johnny does not receive affection at home. His next move is to seek it away from home and from adults other than his parents. To be sure these influences on Johnny may be bad ones but beggars can't be choosers, and he is a beggar. Perhaps Johnny can't get satisfaction even here. He may be one of those children who do not excite affection in others or else the parental guidance may be so strict that he cannot establish outside contacts. He still has the second alternative by means of which he can satisfy his love of affection.

The child can retreat into a life of fantasy, of daydreams; here he is safe. He can daydream as he chooses and he soon learns that by this means he can gratify his needs. He builds his little castles in the air. He imagines himself the child of royal parents and sees himself surrounded by loving attention. If he has no playmates he invents them. We have all known children who have imaginary companions and who play with them for hours at a time. Thus he can—and will—satisfy his love of affection either by means of reality or of fantasy. The same applies to his love of attention—his desire to be in the spotlight at times—and his desire for power.

Each Drive Is Two-Edged Sword

These three dynamic drives would seem to be the great motive forces in building a child's character. It need hardly be pointed out that each is a two edged sword. A child lacks foresight. A want is simply a want to be gratified and gratified to the full. A normal amount of affection is due every child but every child is perfectly willing to take much more than his due, if given the chance. The child then develops an abnormal craving for affection, which he will go to any length to satisfy. Similarly, every child is entitled to be the center of attention at times but may easily develop the habit



of monopolizing attention at all times. The craving for power, if overfed, may easily produce a little tyrant whose rule is more exacting than that of any king in history.

These three drives, love of affection, love of attention and love of power, would seem to contribute the motive power behind most of a child's actions. There is, however, another great determiner to a child's character, which is no doubt in some way linked up with the other three. It is suggestibility, the tendency of the child to accept without criticism any propositions that are given him.

A child tends largely to shape his conduct on lines which he is told he should follow. If a parent tells a child that he should always speak the truth, and if this example is always in front of him, the child will become a truthful man. But suppose the parent tells the child that he is a coward, or that he is stupid, or that he is nervous, or that he is just like his Aunt Mamie, who was always afraid of dogs and who never would eat cucumbers. Such a parent is violating one of the fundamental rules of mental hygiene.

The proper emphasis to be placed on each of these four factors—love of affection, love of attention, love of power, and suggestibility—must always be a matter for common sense and individual choice. The realization of their existence and importance will help a great deal. A few simple rules may be of use.

First, we must realize that a child from birth—a slight exaggeration—to the age of maturity is highly suggestible. This applies especially to the preadolescent and early adolescent years. A child will accept our estimate of him. If he is convinced we think he is a coward, he will oblige. If we assure him he is nervous, he can develop all the symptoms. If we tell him he is a little man, likes outdoor sports and has never really had a sick day in his life he will probably oblige in these matters also.

Must Be Careful in Shaming a Child

The motive behind many of the unpleasant things we say to a child is to shame him and to make him buck up. A little of it is necessary, but only a very little. We must make the suggestion positive. We may tell him that he is perfectly healthy and that we are surprised to see him behaving this way. We may assure him that he has all the marks of a good athlete and we can't understand why he should prefer dolls to baseballs. We may remark to him that he always has behaved like a gentleman and we know that this slip was only because he wasn't thinking. But we must be careful in shaming a child. It is seldom necessary and often disastrous. He will believe what we say; consequently we must say what we want him to believe.

Secondly, every child demands social recognition. The three dynamic drives may be lumped together on this point. Every child demands affection, attention and a certain opportunity to exercise his longing for mastery. Here, it seems to me, is the greatest lever the parent has in guiding a child. The child must be taught that the surest way of obtaining affection and attention is by living up to the best ideals of his day, and the most certain way of losing both is not to play the game.

Affection should be a reward of good conduct. Attention should be given the child when he is engaged in any legitimate activity that should be encouraged. Tantrums bring attention and therefore serve the child's end. If a fit of tantrums always brings a rest of half an hour alone in his own room, they will not be so popular. The surest cure for the hysteric is to leave him or her severely alone. The surest cure for the child who is being a nuisance is to use the same tactics.

Above all things we must realize that every normal child wishes to exercise his love of power, to dominate, to lead. More pathetic wrecks occur on this rock than on any other. Children are not equal in ability. It is senseless to urge a dull child to compete in school with a young genius. He will lose his confidence in himself and his self-respect. To hold this self-respect, he will try his hand at something that he thinks he can do and that brings him into the public eye. Probably most juvenile crimes are caused by just this mechanism of compensation, as it is called.

Character Is Not Fixed by Heredity

Therefore, thirdly, we must realize that the possibilities of any child's intellectual development seem fairly well fixed by heredity. The same seems to apply to his physical development but emphatically does not apply to his moral development. His character is in our hands to a large degree. We cannot make a Shakespeare out of every child; neither can we make a Dempsey; but we can with few exceptions make a self-respecting, law abiding citizen who is filling his place in the world well.

If we are to accomplish this we must let the child retain his self-respect. We must hit the golden mean. We must discover the limitations and abilities of the individual child and, while trying for a symmetrical development of mind and body, must always keep one eye on those abilities in which the child excels and quietly push them. Suggestion is a great weapon.

Finally we must realize that intellectually and physically children are not equal. Character is, however, largely a result of environment. Therefore we must not be unreasonable in our demands on a child but gage them in accordance with his ability.

Dental Superstitions

By W. M. Gardner

I

That dental work should not be done during pregnancy.

Though long, tedious and exacting dental operations should not be done during the later months of pregnancy, all cavities and developing gum tissue disease should be given immediate attention. The mouth should be placed in as good a condition as possible by a dentist during the early months. Infected teeth may then be extracted, preferably under a local anesthetic such as procaine.

II

That every child costs the mother a tooth.

Lack of dental attention both by patient and by dentist is in a large measure responsible for the breaking down of dental tissues during pregnancy. The idea that no dental work should be done during this time, together with the belief that decay and loss of teeth is inevitable, has no doubt been responsible for this misconception.

III

That if there is not enough calcium to form the bones and the teeth of the unborn child, the teeth of the mother are decalcified to make up the deficiency.

It must be borne in mind that teeth even during pregnancy always break down first on the outside, that part of the tooth which is farthest from the blood supply. If teeth were called on to supply calcium for the unborn child they would be attacked from the inside first, because that portion is most accessible to the blood stream. This never happens. It does not seem logical that Nature should go about it in the roundabout way of breaking down tooth structure by means of the saliva, to be swallowed and then taken up by the blood stream in the intestines.

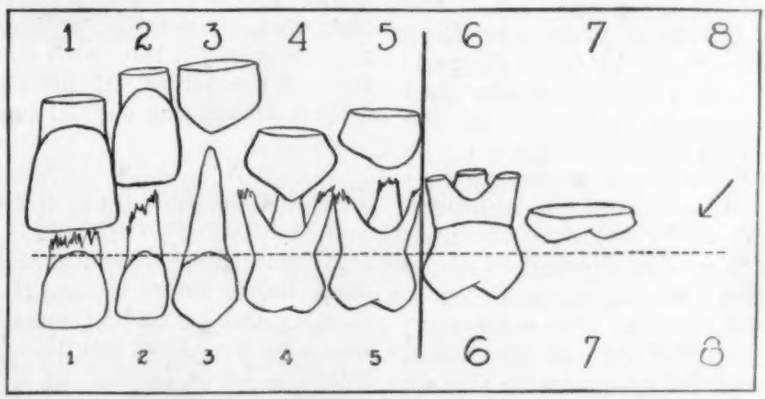
Animals are known to go through frequent pregnancies without loss of tooth substance at this time. Even the domesticated dog with a litter of five or six puppies shows no tooth destruction during this time.

IV

That diet during pregnancy can have little to do with the teeth of the child because the child does not get teeth until he is at least 6 months old.

Tooth formation begins about sixty days after conception, fully seven months before the child is born. By the seventh month after conception nearly half of the crowns of the baby teeth are formed and the first molar of the permanent set begins to form.

The diet of the mother during the whole of this period must consist of food that has an adequate amount of tooth-building substances in it, particularly calcium and certain vitamins.



Diagrammatic drawing of what is happening to the teeth during the seventh year. Small numbers indicate baby teeth, and large numbers indicate permanent teeth. The dotted line represents the gum tissue and the solid line separates the baby molars from the permanent molars. Irregular edges in the roots of baby teeth mean absorption of the roots by the oncoming permanent teeth above them. No. 3 shows no absorption at this time; it is the last baby tooth to be lost. The arrow points to the position of the wisdom tooth, which has not yet started to form.

V

That baby teeth need no attention because they will be lost anyway.

Baby teeth must be as carefully taken care of as the permanent teeth. Small cavities should be filled as soon as they are discovered. It is important to conserve each baby tooth until it is naturally thrown

off by the succeeding adult tooth. Premature loss causes a lack of development of the jaw. The undeveloped jaw will not be able to accommodate the oncoming permanent teeth. A crowding and irregularity will result. This not only paves the way for dental trouble throughout life but also causes distortion and disfigurement of the lower half of the face. The early loss of a baby tooth also impairs masticatory efficiency at a time when it is most necessary to prepare food for the growing child. The infection, which is usually present around a badly decayed baby tooth when the nerve is involved, has a bad effect on the health of the child. Every child should visit a dentist before his fourth year.

VI

That baby teeth have very short roots.

When a baby tooth is fully formed, the length of the root is about twice the length of the crown just as in the permanent teeth. As the permanent tooth forms near the apex of the root of the baby tooth, the pressure of the newly developing tooth causes the root of the baby tooth to be absorbed gradually. When most of the root is absorbed, the tooth becomes loose and falls out. It is succeeded by the fully formed crown of the permanent tooth. (See illustration.)

VII

That the tongue must be kept out of newly extracted baby teeth sockets so that the permanent teeth will not come in "crooked."

Premature loss of baby teeth with its resultant lack of development of the jaw is the big factor in the production of crooked teeth. The slight degree of pressure that the tongue might exert on a tooth about to erupt would not cause an irregularity.

VIII

That the front teeth are the first permanent teeth to erupt.

As a rule all baby teeth are in position before the child is 3 years old. Teeth erupting after this time are teeth of the permanent set. Thus we find that during the sixth year a swelling takes place behind the last baby tooth in position. This swelling announces that the first molar—six year molar—the first tooth of the permanent set, is coming through the gum. Its coming into the arch does not mean the loss of a baby tooth; it erupts behind the baby set.

The first permanent molar is frequently mistaken for a baby tooth and is allowed to decay without receiving attention. If in doubt as to whether it is present or not, one may start counting the teeth from the median line back. If six teeth can be counted on one side the six year molar is present. (See illustration.) This tooth is the most important tooth of the permanent set. It is known as the keystone to the arch. Its loss gives rise to conditions that greatly impair masticating function.

To emphasize then: The six year molar, the first tooth of the permanent set to erupt, is usually in place fully erupted before the lower front baby teeth are lost and replaced.

IX

That thumb-sucking is a bad habit but that there is really no harm in it.

Unfortunately the thumb-sucking habit usually exists at a time when the mouth is in its period of greatest change and development. The dental arches are normally being expanded and shaped. Constant pressure of the thumb and fingers in the mouth and abnormal exertion of the muscles in the act of sucking cause a narrowing of both the upper and lower arches. The front teeth, particularly the uppers, will protrude. The back teeth will erupt farther than they should, so that after a time the front teeth will no longer meet. During this process the nose becomes narrowed so that breathing through it becomes difficult. All these conditions become exaggerated when the child starts breathing through his mouth.

X

That the habit of thumb-sucking will correct itself as the child grows older.

This is quite true, but by that time the damage is already done. The child has not only established a deformity of the face, which is lifelong, but has also impaired the masticating efficiency of his teeth. Parents should make every effort to correct the habit as soon as possible. Various devices, either homemade or manufactured, will be of great assistance.

XI

That some teeth are so soft they will not hold fillings.

Teeth vary somewhat regarding hardness of structure. No tooth, however, is so soft that it will not hold a filling. A properly constructed filling correctly inserted has mechanical retention that could only be destroyed by the decaying away of all the tooth structure beneath and around the filling. If one's teeth are too soft to hold a filling, one should see another dentist.

XII

That the wisdom tooth decays readily because it is softer than the other teeth.

By actual test the enamel covering the wisdom tooth shows little, if any, difference in density and hardness from the enamel of a front tooth in the same mouth. The rapid decay of wisdom teeth is due to their location in the mouth. Because they are hard to reach with a brush they are seldom, if ever, properly cleaned. If they were given the same attention as the front teeth they would resist decay as readily.

(To be continued.)

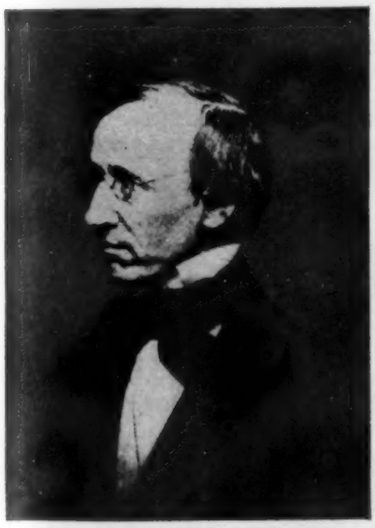
TUBERCULOUS PHYSICIANS

and their Contributions

By J. A. Myers

JEFFRIES WYMAN, the son of a Massachusetts village doctor, was born in 1814. In 1837 he received the degree of Doctor of Medicine from the Harvard Medical School and entered private practice in a town in New Hampshire. He did not meet with success so he returned to Boston, where he opened an office; a little later he was appointed demonstrator of anatomy in the Harvard Medical School. He was so poor that he was compelled to cook his own meals in his room. In order to obtain a little extra money he became a member of the Boston fire department.

Although he had completed his service at the Massachusetts General Hospital he seemed to have little inclination to practice medicine. He was more interested in comparative anatomy, devoting much of his time to the study of frogs and offering lectures on natural history. His lectures became popular enough to provide funds for a trip to Europe. Here he was especially interested in the school which Cuvier had started and in the museums.



Jeffries Wyman, whose research in natural science "added many new details."

Wyman was never strong physically. He developed tuberculosis, and he felt it necessary to spend his winters in the South.

From 1843 to 1847 he was professor of anatomy and physiology at Hampden-Sidney College in Richmond, Va., and it was said that his department at that time was unsurpassed by that in any other institution in his country. He became a fellow of the American Academy and of the Boston Society of Natural History. He published many articles on animal parasites and, in 1843, presented a description of the habits of the chimpanzee, in such a manner that Huxley later said that his researches were "very important" and "added many new details."

In 1847, Wyman was appointed Hersey professor of anatomy in Harvard University. An unfortunate situation for Wyman existed at Harvard at that time. In the same school were Wyman, the scientific anatomist, with but a few students, and Oliver Wendell Holmes, the poet anatomist, with many of them. This resulted in the loss of the influence of Wyman upon the medical students and this has been said to be one of the misfortunes that medicine in this country has sustained. Moreover, at about the same time that Wyman received his appointment, Agassiz was also appointed professor at Harvard and he likewise overshadowed Wyman.

It was Wyman who described for the first time the great ape from Africa and proposed the name gorilla. He was the first to describe an actual specimen of the crocodile from Florida. He made an extensive study of the measurement of the angles of the cell walls in the honeycomb. He confirmed Pasteur's researches on sterilization by boiling. He gave valuable assistance in a memorable murder trial in connection with which he had been able to restore to a whole many small fragments of bone found in a furnace. At the autopsy of Daniel Webster it was Wyman who measured the cranial capacity and weighed the brain.

His contributions were well worth while, and James Russell Lowell paid a great tribute to his life in the following sonnet.

The wisest man could ask no more of Fate
Than to be simple, modest, manly, true,
Safe from the Many, honored by the Few;
To count as naught in World, or Church, or State,
But inwardly in secret to be great;
To feel mysterious Nature ever new;
To touch, if not to grasp, her endless clue,
And learn by each discovery how to wait.
He widened Knowledge, and escaped the praise;
He wisely taught, because more wise to learn;
He toiled for Science, not to draw men's gaze,
But for her lore of self-denial stern
That such a man could spring from our decays
Fans the soul's nobler faith until it burn.

Back They Go to Their~

Photos by Ewing Galloway

BOOKS

Photos by Ewing Galloway

HYGEIA
THE HEALTH MAGAZINE
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Plain Facts about Health and Disease

INFANTILE PARALYSIS

OF ALL the diseases that afflict mankind, none strikes such fear in the mind of the parent as infantile paralysis. Cases of infantile paralysis appear more frequently in August and in September. The child has fever and develops usually paralysis of one or more parts of the body. The cases without paralysis constitute one of the most serious problems in the disease.

Infantile paralysis is not simple to diagnose because most of the infectious diseases begin with similar symptoms. The only suggestion that can be given to parents is that the family doctor be called promptly on the appearance of fever, vomiting, nausea, severe headache, irritability and similar symptoms in the child. Even when actual paralysis does not occur, weakness or difficulty of movement of muscles may develop. In making his decision, the physician does not depend on a single symptom, but on the whole history of the case and the complete physical examination.

The exact cause of infantile paralysis is not known. Apparently, the infection spreads from one person to another. Many people seem to have in their bodies a resistance to the disease. When the infectious material gets into the body it attacks the nervous system, setting up inflammation and irritation and thereby inducing paralysis. In preventing the spread of this disease, one of the most important steps is to isolate the person who has the disease as soon as the condition is discovered. Furthermore, every one who goes near the patient or attends to him in any way must be careful to scrub the hands thoroughly before leaving. All dishes and utensils used by the patient should be carefully boiled, and all the discharges should be collected on cloths, dropped into paper bags and promptly burned. Flies and other insects and pet animals should be kept away from the patient and the room should be screened. During the season when infantile paralysis is occurring in the community, children should not be permitted to travel. They should not play with other children who may be sick even though the illness appears to be slight.

The paralysis is the most serious outcome of the disorder. Its prevention depends particularly on absolute rest during the time of acute inflammation. At such times massage or manipulation is harmful. When the patient begins to convalesce at about the sixth week, properly controlled massage and movements may be used to restore function to the paralyzed limbs.

The great promise in the control of infantile paralysis is the use of serum from patients who have recently recovered from the disease. If the diagnosis is made early—within the first three or four days—and if during this stage the patient is injected with serum taken from some one who has recently recovered from infantile paralysis, there is a possibility of preventing paralysis altogether, and certainly of limiting the extent and severity of the paralysis that occurs. One of the difficulties of the situation today is to secure cooperation between hospitals, physicians and patients so that this valuable convalescent serum from persons with infantile paralysis may be available when needed by the suffering child.

Proper nursing care and education mean a great deal for the comfort and happiness of the child with infantile paralysis. The disease is painful, the child is helpless and must depend on its nurse for food and for every change of position. Gentle handling, sympathetic attention, and the proper use of stories and play will serve to keep the crippled child contented and happy during the long period of recovery.

THE CHAMPIONSHIP FIGHT

IN NEW YORK CITY at the Yankee Stadium recently some fifty thousand fight enthusiasts, curiosity seekers, newspaper men, photographers, ring hangers-on and hoi polloi assembled to view a scientific demonstration by Mr. Gene Tunney, present holder of the heavyweight championship. In this exhibition of the fine art of boxing, the subject was a foreign guest, variously heralded as the "Hard Rock," "the man from down under," and perhaps best recognized under the name of Thomas Heeney.

Previous to the major encounter of the evening, several ambitious young gentlemen, desirous of succeeding to the throne and emolument of the gentleman first mentioned, performed warily and vigorously for brief periods. The briefest period was that of a somewhat swarthy gent heralded as the Portuguese champion. He indulged in thirty seconds of shadow boxing immediately after the bell rang, when a somewhat ponderous Italian inhabitant of New York's East Side made contact with the Portuguese cranium. Dreamland ensued—a brief demonstration of the power of matter over mind.

The main spectacle provided evidence that completely reversed this demonstration. In that encounter, a cool, smiling and somewhat bored American marine deposited collections of fists repeatedly on every available portion of the New Zealander's anatomy. Finally the latter, bleeding from three or four portions of his body, and apparently dizzy with fisticuffs, reclined until the bell saved him from a knockout. Then he came forth to be saved again by the wise intercession of a competent referee. The apparent willingness of the New Zealander to carry on the battle with his far superior opponent and to take even the last stunning blow in order to secure a retiring income brought the plaudits of the multitude.

This description of the great fiasco—for after all most of the heavyweight championships during the last few years have been fiascos—is not presented to discourage the practice of boxing as a sport. Mr. Gene Tunney has evidently sought, somewhat in vain, to raise the dignity of fisticuffs as a profession. Having secured more than a reasonable income from his endeavors, he retires to literary and commercial pursuits, although it has been hinted rather generally that the commercial aspect has never been quite absent from the professional ring-game. He leaves a field in which it would seem that great financial prizes are not likely to be available soon again.

Perhaps Tunney's retirement will aid the situation by directing human interest to the athletic rather than the commercial aspects of the sport. The rewards have been out of all proportion to the value of the game as either sport or amusement. Nevertheless newspaper philosophers are inclined to believe that the American will pay any sum for his amusement, and that if only a champion has sufficient dramatic color, the limit of the emoluments has not yet been reached.

THE AUTOMOBILE EXHAUST HAZARD

WITH cooler weather just around the corner, a warning seems again to be in order against the hazard of gas poisoning from the exhausts of automobiles. When more than one part of carbon monoxide gas in 10,000 parts of air occurs in the atmosphere, a definite hazard develops for human health and life. A few years ago authorities in the physiologic laboratories of Yale University pointed out that the danger from carbon monoxide poisoning was ever present in the exhaust gas of automobiles. Newspapers began to report increasing numbers of deaths of persons who had worked in closed garages with automobile engines running.

Recently experts from the U. S. Public Health Service studied the problem of automobile exhaust gas in the streets and in automobile repair shops in fourteen large cities. One hundred and forty-one tests made in city streets during the hours of thick traffic showed an average contamination of 0.8 part of carbon monoxide in 10,000 parts of air. Twenty-four per cent of the samples had more than one part of carbon monoxide in 10,000 parts of air, and in only one location, a covered passage-way, was there as much as two parts in 10,000. The hazard in the streets is therefore not a serious one. Apparently the diffusion of the gas is sufficiently rapid to prevent harmful symptoms to the average man. However, the traffic officer who stands constantly amidst a stream of automobiles of all varieties, the workers in freight stations who are constantly passing over the rear ends of trucks whose engines are running, and workers in long tunnels without proper ventilation face a constant danger. It was thought, because of the size of automobile buses, that persons who rode in these vehicles would be unusually subject to carbon monoxide gas, but the evidence indicates that they do not have an unusual hazard.

The greatest danger faces the man or woman in the small garage who closes the doors and windows on a winter day and works about the car with the engine running. In such cases

serious symptoms and even death have ensued in a few minutes to a number of persons who should have known better but who died because of their ignorance.

INFANT DEATHS IN 1927

THE American Child Health Association has just made available its annual report on the deaths of infants in 716 cities in the United States during 1927. Of these 716 cities, 683 are within the birth registration area. This area includes forty states and the District of Columbia. The people of these cities have apparently been sufficiently intelligent to realize that it is impossible to control preventable diseases unless one has some inventory of the diseases that afflict the inhabitants and of the number of persons who become sick and who die of these diseases.

In 1927 the infant death rate for 683 cities in the birth registration area was 64.9. Approximately sixty-five babies out of every thousand that were born died before they were 1 year old. The number is in itself sufficiently striking to demand serious consideration. This is even more the case when one realizes that the rate is the lowest ever reached by the cities of the United States as a group. Think of the sadness, of the feeling of futility, that must come to a mother who has undergone the travail and the burden of childbirth and who loses her baby before it is 1 year old.

In 1915, when the birth registration area was first established and consisted of ten states and the District of Columbia, 100 out of every 1,000 infants born died before the first year. In 1926 the rate was 73.7. It is important to realize that there are some places in the world in which the rates are constantly around 50.

An analysis of the figures made available gives to Seattle, Wash., the distinguished honor that it has had for many years among the cities with a population over 250,000; namely, the low rate of 41 infant deaths per 1,000. Portland, Ore., and Minneapolis follow with rates of 47. Among cities with a population of from 100,000 to 250,000 the four with the lowest rates were Bridgeport, Conn., 43; St. Paul, Minn., 49; Oakland, Calif., and Grand Rapids, Mich., each 53. East Orange, N. J., leads the cities with a population between 50,000 and 100,000 with a rate of 26. Alameda, Calif., led those between 25,000 and 50,000 with a rate of 9, and Summit, N. J., with a population between 20,000 and 25,000 led with a rate of 15. Not one important southern city is included among the leaders in the saving of infant lives. Chicago has lowered its rate from 87 to 63 in a period of five years, and New York from 75 to 56 in a similar period. These figures are an indication of what can be accomplished by the community that is willing to spend sufficient money in the education of its public.

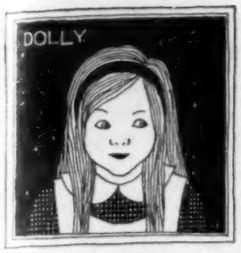
Contrasting with the figures that have been quoted, the cities of Denver and New Orleans have rates of 81 and 88; Lowell, Mass., and Fort Worth, Texas, rates of 91 and 94; Portland, Va., Chattanooga, Tenn., and Charleston, S. C., rates of 154, 125 and 130; Wilmington, N. C., Winston-Salem, N. C., Joliet, Ill., and Columbus, Ga., rates varying from 116 to 140. A smaller community, Newbern, N. C., had a rate of 109; Tucson, Ariz., 140, and Florence, S. C., 142.

Obviously there is still great room for improvement in America as a whole so far as relates to the control and prevention of infant deaths.

THOMAS SYDENHAM

IN THIS issue of HYGEIA begins a health almanac, which will appear month by month throughout the coming year. It is significant that it should be headed by Thomas Sydenham, recognized as one of the world's greatest medical clinicians. His clear thinking and his devotion to medicine are perhaps best exemplified by the following extract from his notable essay on the plague:

"If the reader shall find that I have anywhere erred in theory, I beg his pardon; but as to practice I declare I have faithfully related everything and that I never proposed any plan of cure before I had thoroughly tried it. Indeed, when I come to die, I trust I shall have a cheerful witness in my breast, that I not only, with the greatest diligence and honesty, attempted the recovery of the health of all who committed themselves to my care, of what conditions soever they have been—of whom none was otherwise treated by me than I desire to be if I myself should happen to suffer the same diseases—but that also I have labored to the utmost of my power, if by any means it might be that the cure of diseases may be managed after I am dead with greater certainty: for I esteem any kind of progress in that kind of knowledge (how small soever it be) though it teach no more than the cure of the toothache, or of corns upon the feet, to be of more value than the vain pomp of nice speculations."



How the Cate Twins Painted Their Cheeks

By

Blanche J. Dearborn

"WHAT do you suppose she'll look like?" asked Julia.

"I don't know," said Sally, "but I hope she's pretty. I just love pretty teachers."

"Huh!" grunted James, "I don't care whether she's pretty or not, if she is only good fun."

"I hope she won't be cross," said slow little Elsa, who never could remember two times three or tell "bun" from "run."

Miss Moore, the regular teacher of Grade II, was sick, and had gone away for a month's vacation. This morning there was to be a substitute and the children were guessing what she would be like.

As the children came into the school, at the door of room 3 stood the new teacher.

"Good morning," she said with the jolliest smile. "I am Miss Brant."

"Good morning, Miss Brant," said the children together as Miss Moore had taught them.

"Are you all here now?" asked Miss Brant looking them over.

"No," said Sally, "I don't believe the 'Late twins' are here yet."

"What did you say their name is?" asked Miss Brant in surprise.

All the children began to laugh and Sally explained, "Their real name is Cate, Miss Brant," she said, "but they never come to school on time so we call them the Late twins."

Just then the big electric bell said, "Ting-ling, ting-ling," and the children hurried to their seats. That very minute the door was pushed open in a hurry and in came two little girls. They ran to their seats and sat down just as the last "l-i-n-g" of the bell died away.

"Puff, puff, puff," they went and how tired and hot they looked. Miss Brant knew at once they must be the "Late twins."

"Good morning," she said, but the twins were so out of breath they could only say "Goo-morning."

Miss Brant began to arrange the books on her desk and the children took the opportunity to look at her.

"She is pretty," exulted Sally, and indeed she was. She was small and young, with black curly hair and the pinkest of cheeks. Her eyes were deep blue and every time she spoke they twinkled as if they knew a joke.

"Oh boy!" whispered James. "Won't we have fun!"

Slow little Elsa looked at her longest. She saw the tiny tendrils of hair curling so charmingly around her ears but she shook her head—pretty people were often times cross. She looked into the twinkling blue eyes and gave a little sigh; it hurt somewhere inside of her when a teacher laughed at her mistakes. Then she looked at Miss Brant's mouth and a warm comfortable feeling stole all over her, for the new teacher had the kindest smile she had ever seen.

While the children were deciding they liked Miss Brant she was coming to the same conclu-

Miss Brant said: "Now we can get better acquainted. Come up here and we shall talk."

sion about them, but she wondered what could make the Cate twins so white; why little Elsa looked so dull and slow and what made the big boy in the back seat scowl all the time.

"I am going to find out about those children," she said to herself, "and I am going to change them too, just see if I don't."

Then she said, "Now, children, this is my first morning and I don't know about anything so you will have to tell me."

All the children sat up straighter and every one of them smiled, all but the big boy in the back seat. What fun it was to know more than the teacher—Miss Moore had always known everything and had never sought advice.

The day went so fast that when late afternoon came no one wanted to go home. The children all wanted to stay and help after school.

"Oh my, no!" said Miss Brant with her laugh that made the children think of a little brook in the woods. "I can't have all of you tonight because then there would be no one to stay with me tomorrow and think how lonely I should be."

The children wanted to say they would all stay every night, but Miss Brant didn't give them the chance. She said, "I will choose some one each day; now let me think who it shall be tonight."

She put her hands over her eyes and screwed her mouth up tight till it looked liked the reddest of rosebuds. Then she opened her eyes as quick as a wink and clapped her hands.

"Dolly and Polly Cate," she said.

"Good night, then," said the other children; "we shall see you in the morning."

"Indeed you will," laughed Miss Brant.

Left behind, Dolly and Polly smiled shyly and asked, "Shall we clean the blackboards first?"

"Yes, please," said Miss Brant, "that will be fine."

By and by when the blackboards were clean, the papers piled up and the books all in order, Miss Brant said, "Now we can get better acquainted. Come up here and we shall talk."

Dolly stood on one side of the big desk and Polly on the other side and they looked and looked at Miss Brant. Then Polly asked suddenly, "Miss Brant, what *does* make you so pretty?"

Miss Brant gave her soft tinkling laugh and asked, "What is it about me that you think is so pretty?"

"Everything," said Dolly and Polly together. "I think the really loveliest thing of all is that soft pink in your cheeks," said Polly shyly.

"It's just the color of the clouds at sunset," added Dolly softly.

"Oh, that!" said Miss Brant. "That is nothing but paint."

"O-o-o-h!" said the twins in such disappointed tones that Miss Brant hastened to explain.

"It's a very special kind of paint," she said. "My mother put it on for me when I was a little girl not as old as you are and it has never come off."

"O-o-o-h," said the twins again, but now the disappointment had turned into surprise.

"I didn't know there was any paint that stayed on that long," said Polly.

"Doesn't it come off when you wash your face?" asked Dolly.

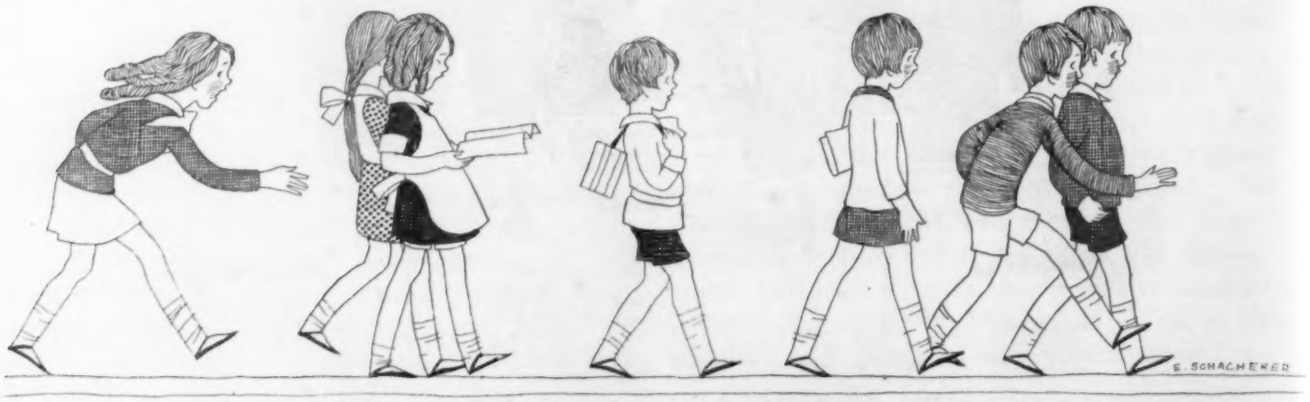
"No," said Miss Brant, "it has never come off and I wash my face three times a day. I wonder if you would like to try some of the paint. You could if you wanted to."

"Could we really?" asked Dolly.

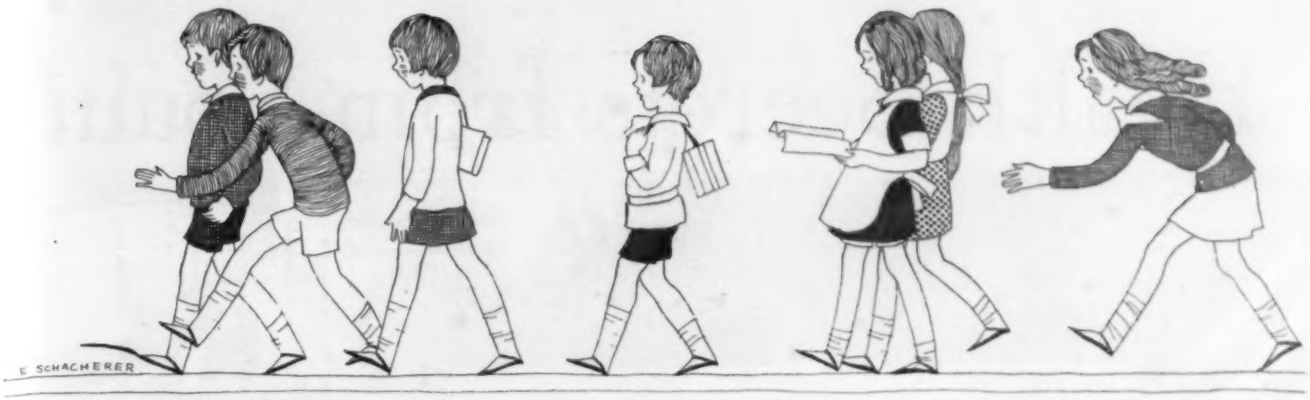
"Would it be all right?" asked Polly.

"To be sure you can if you will, and it will be all right," said Miss Brant answering both questions at once. "All you have to do is to follow the recipe. I will write it on the board for you and then you can copy it."

Miss Brant went to the board and Dolly and Polly both took paper and pencil. When Miss Brant had written down four lines the twins began to giggle and with every line after that they giggled more and more heartily.



"Good night, then," said the other children; "we shall see you in the morning."



The other children were surprised when they saw Dolly and Polly coming to school early.

When it was all done, this is what they read:

HOW TO MAKE A PRETTY CHILD

First choose your child—
'Most any one will do.
Add a quart of milk
And an egg or two.

Garnish with vegetables and plenty of fruit,
Top with a pudding or a chocolate mint.
Then put her out in the sun to stay
Till she takes on a rosy tint.

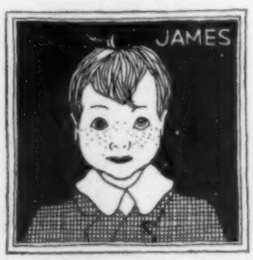
At half after seven pop into bed.
Cover up warm, all but the head.
Open the windows and shut the door.
Do not disturb for ten hours or more.

Now if you've followed this recipe right,
Your child is certain to rise up light.
Her cheeks will be rosy, her eyes shiny bright,
And she'll be happy from morning till night.

"Did you ever see that recipe in your mother's cook book?" asked Miss Brant turning around.

"I don't believe it's in there," said Dolly, "'cause we never go to bed until father and mother do. Then we are so sleepy in the morning we don't wake up till eight o'clock. That is why we have to run to school so fast, and some mornings we don't have time for any breakfast, because Miss Moore is dreadfully cross if we are late."

Now I know why they look so thin and white, thought Miss Brant, but all she said was, "If you will follow this recipe I can guarantee that the color will not fade either in sun or in washing."



"Will it make my hair curl like yours?" inquired Dolly.

"Well," laughed Miss Brant, "I don't guarantee that, but if

Your cheeks are rosy red,
Your eyes shining bright,
And you are happy
From morning till night,

you will be so pretty you won't need curly hair."

"Let's try it," said Dolly, "I am sick of being late to school every morning and I feel tired all day besides."

"So do I," said Polly. "We must go now and show mother your recipe. Good night, Miss Brant."

"Good night, Dolly and Polly," said Miss Brant, "I shall be watching to see what good artists you are."

The next morning on the way to school Miss Brant heard running feet behind her, and when she turned to look, who do you think it was? Dolly and Polly, but not the "Late twins." No indeed, they were the "Early twins" this morning.

"We tried your recipe," they both shouted, "and part of it has worked already; we haven't been cross once this morning."

"Mother thinks it is the best recipe she ever saw," said Dolly. "I drank two glasses of milk for breakfast."

"So did I and we both had an egg," said Polly. "We didn't have to hurry at all. We ate breakfast with father and it was lots of fun."

"Let me look at you," said Miss Brant.

The twins stood very still and Miss Brant looked long and carefully, first at one and then the other.

"Yes," she said, "it's beginning to work. Your eyes are bright already and here on Dolly's left cheek in the upper right corner I can see a drop of pink paint and on Polly's nose at the very end is a brush mark."

Polly and Dolly giggled and giggled. "I guess they are freckles," they said.

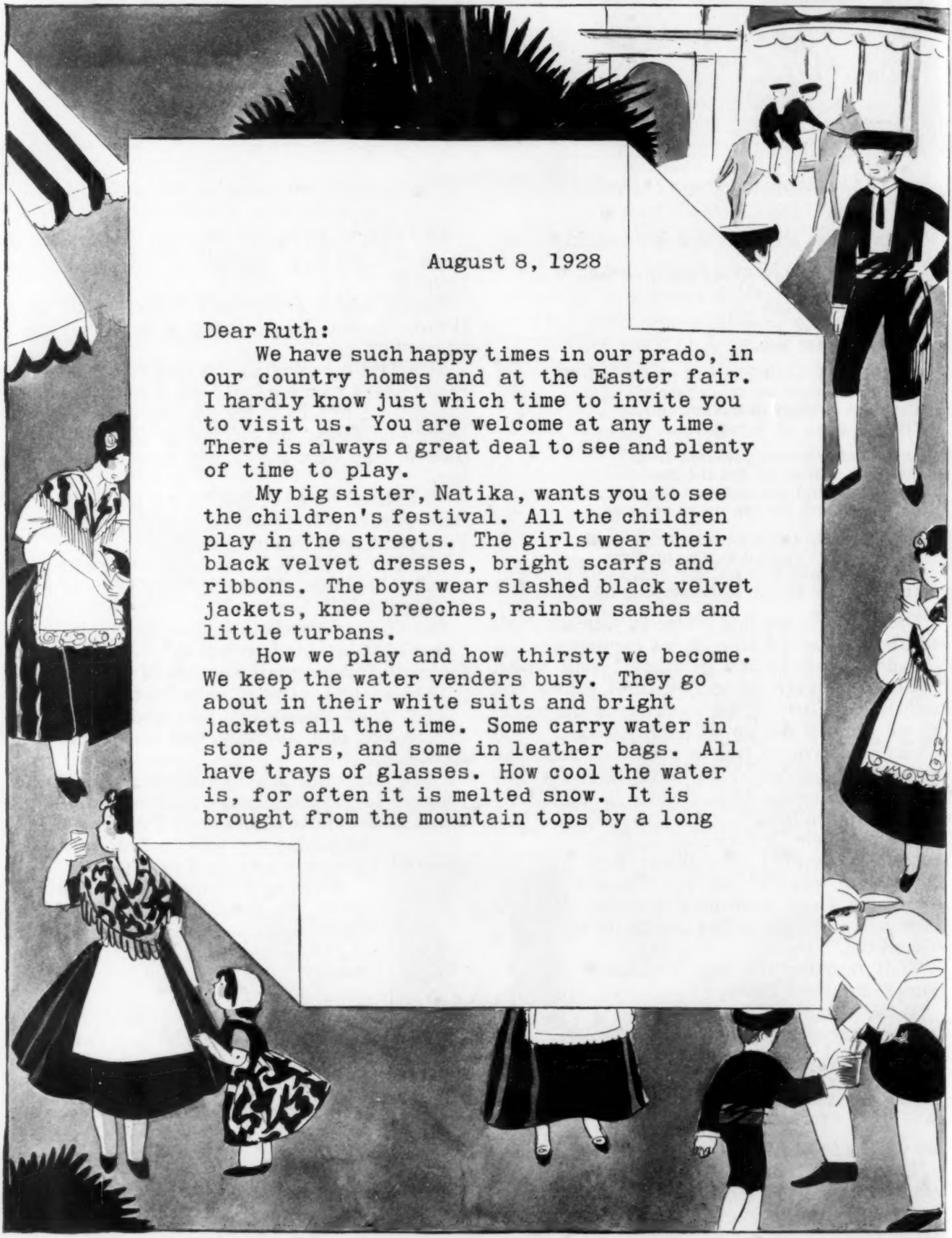
"The idea!" said Miss Brant indignantly. "As if I couldn't tell pink paint from freckles."

When the other children came to school and saw Dolly and Polly they looked so surprised that the twins laughed and laughed until Miss Brant said:

"My, my, the recipe has worked already; your cheeks are as rosy as Baldwin apples!"

Every day after that the twins were very careful to follow the recipe and sure enough, their cheeks grew red, their eyes were bright, and they were happy from morning till night.

Health Secrets from Spain



August 8, 1928

Dear Ruth:

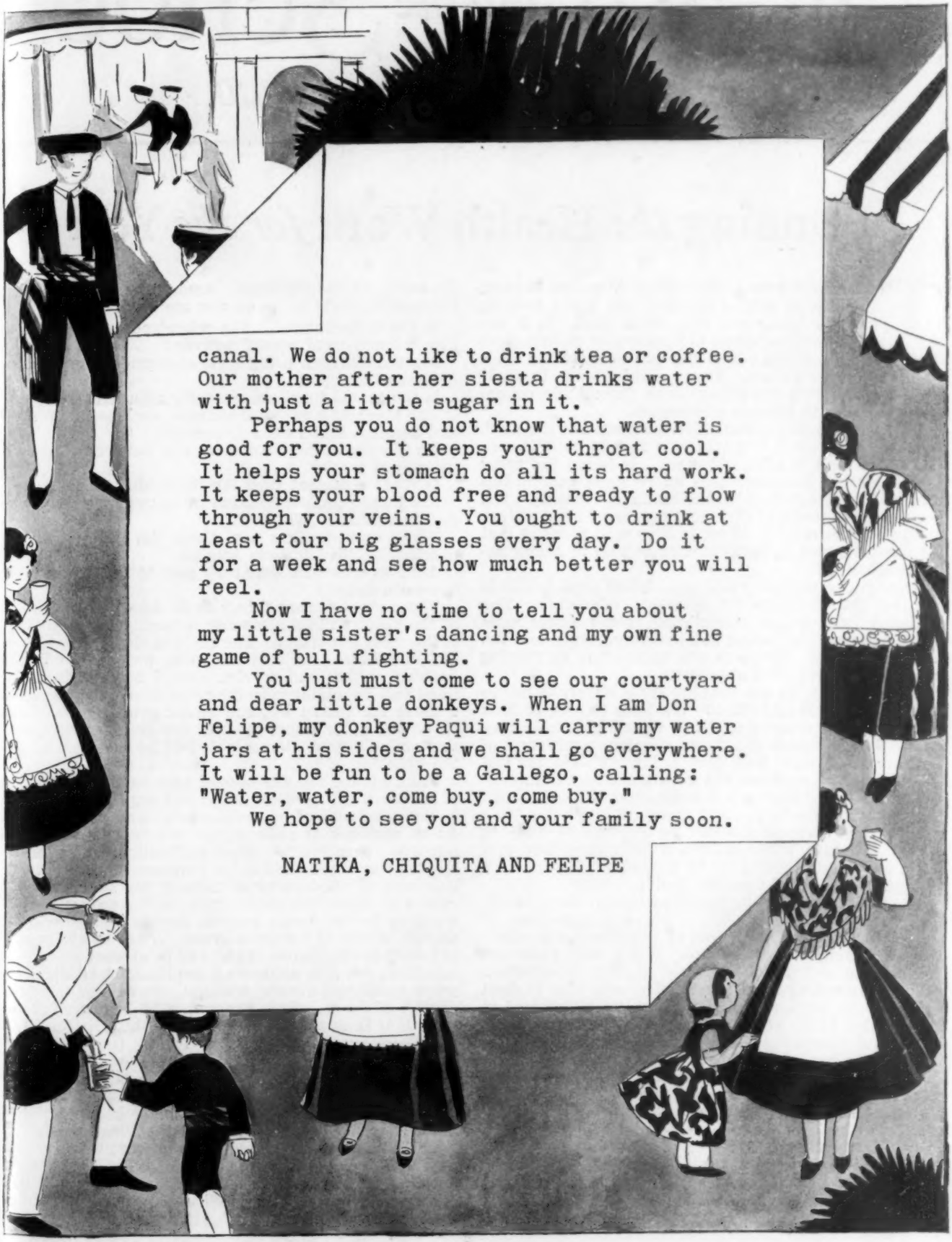
We have such happy times in our prado, in our country homes and at the Easter fair. I hardly know just which time to invite you to visit us. You are welcome at any time. There is always a great deal to see and plenty of time to play.

My big sister, Natika, wants you to see the children's festival. All the children play in the streets. The girls wear their black velvet dresses, bright scarfs and ribbons. The boys wear slashed black velvet jackets, knee breeches, rainbow sashes and little turbans.

How we play and how thirsty we become. We keep the water venders busy. They go about in their white suits and bright jackets all the time. Some carry water in stone jars, and some in leather bags. All have trays of glasses. How cool the water is, for often it is melted snow. It is brought from the mountain tops by a long

A Foreign Letter

By Katharine Ranger



canal. We do not like to drink tea or coffee. Our mother after her siesta drinks water with just a little sugar in it.

Perhaps you do not know that water is good for you. It keeps your throat cool. It helps your stomach do all its hard work. It keeps your blood free and ready to flow through your veins. You ought to drink at least four big glasses every day. Do it for a week and see how much better you will feel.

Now I have no time to tell you about my little sister's dancing and my own fine game of bull fighting.

You just must come to see our courtyard and dear little donkeys. When I am Don Felipe, my donkey Paqui will carry my water jars at his sides and we shall go everywhere. It will be fun to be a Gallego, calling: "Water, water, come buy, come buy."

We hope to see you and your family soon.

NATIKA, CHIQUITA AND FELIPE

Health *and the* School

Edited by J. Mace Andress, Ph.D.

Planning *the* Health Work *for the* Year

THE school year is beginning. Vacation is over. Millions of school children are again turning to their books and school activities. It is the educator's privilege to be a leader of this great army of children and youth who are to make the adult America of the future. These children are in their plastic years and the impressions from their school life are likely to become permanent.

Most worth while accomplishments are not the mere result of hard work, important as that is, but the conclusion of well thought out plans. It is not the army that fights but the army that under good generalship uses its intelligence to plan the battle that usually wins. We are the generals of this far-flung school army. Have we a program ready? If so, is it so well planned that we have the best methods of carrying on to a successful conclusion?

Great educators today are agreed that good health is one of the fundamental aims of education. The National Educational Association, other educational organizations of state and national importance and the latest books on education are unanimous in putting health among the first objectives.

Unfortunately, in the past we have merely done lip service to health education. We have trusted to luck that our vague dreams might in some indefinable way be realized through the incoordinated machinery of the school. This is true even today. Within the last ten years great progress has been made in health education in the elementary schools, but there are still large states in the Union and there are cities that have no course of study in health. By a course of study in health is meant training in activities or habits that make for health rather than in facts about the anatomy and physiology of the human body.

The major plans of the health campaign should ordinarily come from the office of the superintendent of schools or through the hands of the director of physical education, if there is one. When such plans are lacking the individual principal should formulate a program based on local needs. The city that is dead in its health work invariably has a superintendent of schools that is not sensitive to matters of health. The individual school that is progressive in health education usually has a wide-awake principal who is keenly interested in the health of the children. Even in the most unprogressive city systems and individual schools a single teacher here and there with little or no cooperation will accomplish wonders in training her pupils in healthful living.

No matter whether there is a course of study in health or whether those in authority are vitally interested, every teacher may accomplish something worth while. Her purposes for the year should grow out of the needs of the children. Among the questions that the teacher might try to answer are the following:

Is the temperature in the schoolroom conducive to comfort and good mental activity?

Are the children using their eyes under proper conditions as to light?

Is the school furniture properly adjusted?

Are there any physical defects, such as poor sight and hearing, that I need to consider?

Do the pupils have sufficient rest between strenuous periods of work?

Is there sufficient time for the midday meal?

Are there pupils who seem to be unhappy in pursuing their tasks? Why?

What opportunities are there for the pupils to practice health habits in school?

Am I as a teacher doing my part to help train them in health habits?

There are so many things to be done for the health of the children that a teacher naturally inquires what is the most important. The reply is that the health of the individual pupils is the focus around which the health teaching and service should be organized. If nearly all the children in the room have defective teeth a drive for dental hygiene might properly be made. If, on the other hand, most of the children drink tea and coffee a campaign might well be inaugurated for the drinking of milk.

Although the teacher should take as the foundation of her work the needs of individual pupils there should be a general plan of instruction with well defined goals. As an example of such a plan we reproduce on the opposite page the "Program in Health Instruction by Months for Grades I-VIII," a document issued for the guidance of one-teacher schools in the state of Pennsylvania. Note that every grade in the school will be working on the same general project but it will be slightly different for each grade. Thus in the month of December the fourth grade will be at work on a good breakfast, the fifth grade on a good lunch and the sixth grade on a good dinner, while all are dealing with the subject of foods. This program will be more intelligible if it is studied with the aid of Bulletin No. 29 of the Commonwealth of Pennsylvania Department of Public Instruction. Then we discover the thing of final worth in the instruction; namely, the outcome. Thus the outcome of the instruction for the fourth grade in the month of December is *Eat a good breakfast.* Not knowledge but behavior is the goal of final worth.

With such a well-planned program both teachers and pupils will be conscious of their goals. A program does not insure success but usually few results are accomplished without it. What is your program for the school year that is just beginning?

OBJECTIVES OF—
Superintendent
Principals
Supervisors
Teachers

Commonwealth of Pennsylvania
DEPARTMENT OF PUBLIC INSTRUCTION

Program in Health Instruction by Months for Grades I-VIII

OBJECTIVES FOR PUPILS

Physiology and Hygiene

Month	PROJECTS	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII	Grade VIII	Grade VII-VIII
Sept.	**Cleanliness** Clean children in clean schools	(Bodies) Face Hands Neck Ears *Outcomes: 1, 2, 5, 6, 18, 24, 33, 34	Hair (scalp) Nails †Outcomes: 19, 20	Mouth Teeth No foreign articles in the mouth Fingers Pencils †Outcome: 15	No cavities in six-year molars †Outcome: 22	Clothes Books †Outcome: ‡2a-h	Classroom †Outcome: ‡1a-g	Yards †Outcome: §9	Building Halls Classrooms Library Gymnasium Toilets ‡Outcome: §5	Cells Growth of body 1. Compare with requirements for growth of cells 2. Relate to records of Weight and Height Charts Skin & appendages
Oct.	**Posture and Play** (Rest and activity) Every pupil participating in games	Play Outcomes: 9, 10, 11, 28, 36, 40, 41	Marching Outcomes: 37, 42, 45	Writing Outcome: 29	Reading Outcomes: 21, 3 (Preparation for relief periods)	At blackboard Outcomes: 6, 7a, 9, 2i	In classroom Outcomes: 6, 7a, 9	In halls Outcomes: 7, 11, 12	On street Outcomes: 7, 11, 12	Bony System Muscular System
Nov.	**Prevention of Colds** (Fresh air) Outside wraps removed in classroom	Use of clean handkerchief Outcomes: 4, 7, 13, 14	Every child with clean handkerchief Outcome: 7	Remember to use handkerchief correctly Outcomes: 7, 30	Remember to remove overshoes without being told Outcome: 30	Remember to remove wraps Outcome: 7b	Proper care of wraps Outcome: 7b	Suitable clothing for school Outcomes: 1, 2, 3, 4, 6, 14	Prevention of colds Outcomes: 1, 2, 3, 4, 6, 14	Respiratory System Circulatory System
Dec.	**Foods** Food eaten at school wholesome	Drink milk Outcomes: 25, 26a	Eat fruit and cooked cereals Outcome: 26c-d	Eat vegetables Outcome: 26b	A good breakfast Outcome: 27	A good lunch Outcome: 8	A good dinner Outcome: 8	Balanced meals Outcome: 13	Food and efficiency Outcome: 13	Digestive System Eliminative System
Jan.	**Safety First** Pupils practicing safety first in winter sports	Dry feet Outcome: 32	Sleds Outcomes: 32, 38	Games Outcome: 32	Street crossing Outcome: 32	Slippery slides Outcome: 4	Snowballing Outcome: 4	Safe coasting Outcome: 12	Safe skating Outcome: 12	Safety First First Aid
Feb.	**Remediable Physical Defects** Correction of remediable physical defects	Care of teeth Outcomes: 17, 22, 44	Care of teeth Outcome: 22	Dental attention Outcome: 31	Dental attention Outcome: 31	Correction of remediable physical defects Outcomes: 3, 5a Care of eyes and ears	Correction of remediable physical defects Outcomes: 3, 5a Special senses	Clean bill of health Outcomes: 8, 10, 15 Relation of physical defects to special senses	Clean bill of health Outcomes: 8, 10, 15 Relation of physical defects to nervous system	Nervous System
March	**Communicable Diseases** Prevention of communicable diseases	Clean food (fruit or any food brought to school) Outcome: 8	No candy at school (calls flies) Outcome: 8	Wash hands before eating Outcome: 23	Wash hands after visiting toilet Outcome: 16	Kill flies seen Outcome: 5b	Destroy breeding places of mosquitoes Outcome: 5b	Develop appreciation for quarantine Outcome: 14	A citizen's responsibility in prevention of communicable diseases Outcome: 14	Community Hygiene
April	**Special Habits** Form some new habit by Child Health Day, May 1	Teacher decides in Grades I, II, III Outcomes: Those related to habits chosen by teacher			Sleep required hours with windows open Outcome: 29	Mental habits Outcome: 10	Special habits Outcome: 11	Habits and character Outcome: 15	Habits not emphasized before Outcome: 15	Use of alcohol, tobacco, drugs, patent medicines
May	**Vacation** Choose project for vacation	Habits through games Outcomes: 9, 10 Project for primary grades through vacation: Games to play this summer Health habits during vacation	Habits through games Outcome: 40	Games at home Outcome: 12	Games on playground Outcomes: 43, 39	Health game in vacation Outcome: 2	Picnic Outcomes: 4, 7, 8	Hikes Outcome: 12 First Aid	Camping Outcome: 12	Community Hygiene Water supply Food supply Fire protection First aid

* Numbers refer to Outcomes prepared for Grades I-IV in Bulletin No. 29. (Organization of a Health Instruction Program for One-Teacher Schools.)
† In each grade the Outcomes of former years should be reviewed to learn whether those practices are being continued.
‡ Numbers refer to Outcomes prepared for Grades V and VI in Bulletin No. 29. § Numbers refer to Outcomes prepared for Grades VII and VIII in Bulletin No. 29.

Teaching Health

In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words, preferably less, to the editor of this department. Illustrations showing the actual work of children will be welcomed. Contributions accepted will be paid for, but no manuscripts will be returned.

THE BOYS' HEALTH CLUB

FORTY shining boyish faces gleamed from recent generous applications of soap and water. Forty boyish heads were sleek from vigorous employment of brush and comb. Forty pairs of hands were carefully groomed. Forty pairs of shoes were highly polished. Forty lads were boyishly conscious of unusually good appearance and good posture as they awaited the gong that indicated the opening of school. Such was the picture upon which Miss A— gazed as she took her place at the desk one Friday morning last month.

Do you ask if the millennium had actually been reached at last? Not at all; this beatific state of boyhood merely indicated the occasion of the regular monthly meeting of the Boys' Health Club of the X— School. This organization, which had earned the reputation of providing the jolliest sort of entertainment at its meetings, had established rigid rulings in regard to admission to these justly popular assemblies. No one was allowed at the club meetings until he had submitted himself to the careful scrutiny of his district inspector, and no boy in the group would knowingly jeopardize his chances of attendance by failing to look his best on these gala occasions.

The Business Meeting

The devotional exercises and the music period having passed off as usual, the health commissioner

Boyish heads were sleekly combed.

stepped forward and opened the meeting in a strictly businesslike manner. The report of the secretary was read and accepted. Roll call followed. To this each member responded with a worth while health quotation; e. g., "The time to make a good citizen is to begin before he is a man. Teach him good habits when he is a boy."—Roosevelt. "Gold that buys health can never be ill spent."—Webster. "Give him air, he'll straight be well."—Shakespeare.

Committee Reports

Inspection Committee.—The first committee to report was the committee on daily inspections. This included the records submitted by the district inspectors, each row in the classroom having been designated as a district and inspected daily by its own particular officer.

A schedule of the points for which credit might be secured had previously been placed on the blackboard. Attention was called to this by the committee chairman, and each district's earnings were noted under the various items that go to make up personal appearance. The winning district having been duly applauded, its members automatically became inspectors for the ensuing month according to the plan.

Up to normal weight and height.

The chairman stressed the point that, unlike gain in weight or in sports, success in this competition required merely good will and a little effort, that one had not to wait a long while to see results, for such things as clean hands and nails and well kept good teeth are apparent immediately.

A song, Folk of the Health Class, sung to the tune of Solomon Levi, completed this committee's work.

Sports Committee.—The chairman of the committee on sports next responded. This office had fallen to the captain of the baseball team. The nine had been having poor luck up to this point in the season. The captain read the record of games won and games lost, followed by a plea for greater effort on the part of the players, stressing the need of good physical condition in order to achieve success. With great earnestness he outlined habits of eating, sleeping and exercise, which would aid in producing good condition and thus make a successful season more likely.

The chairman urged the entire group to make the establishing of such habits easier for the team by setting a good example and by keeping them out of temptation. "It's hard for a player not to smoke if the other fellows are smoking as they walk along with him. Even if you are not playing yourself, help the fellow who does play. Boost your team even if it does mean a little self-sacrifice." Then, having opened the windows and invited all to stand, the chairman led the club in singing a rollicking school song.

Captain of the safety patrol.

Safety Committee.—When order had been restored the captain of the safety patrol was asked for his report. At a given signal from the captain the door was opened and in came the sixteen members of the boys' traffic patrol in the regalia of their office. After a spirited march and setting-up drill to the music of the harmonica, the boys were given a minute or two of rest after which they sang the song, "Watch Your Step," of recent radio fame.

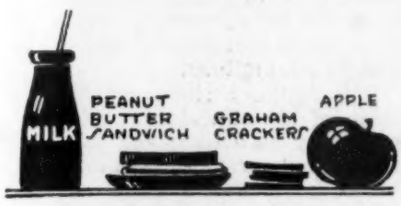
This was followed by a report of the work accomplished by the patrol since its last meeting. It told of the effort to establish among the school children the habit of keeping on the sidewalk, of looking both ways before stepping from the sidewalk, of playing only in properly safeguarded spots. Service at the local theater on Saturday mornings at children's entertainments was noted, as was the distribution of circulars entitled, "Ten Don'ts for School Children."

Committee on Health Habits.—The last committee to report was the committee on health habits. The chairman read a list of members who were up to normal weight and another list of those who had gained in weight since the last meeting. He displayed graphs showthe distribution of the weights of the class as compared with the curve as it should be if all were up to the standard in weight. Another graph with two curves showed the gain since the previous meeting. Boys still underweight were given

copies of "Rules for Gaining" published by the Massachusetts Department of Public Health.

The names of pupils who had had various defects corrected since the last meeting were added to the honor roll. Posters were placed about the room to emphasize various good health habits. Some of these were very effective, and their makers came in for commendation.

New Business.—The make-up of committees for the ensuing period was then announced by the commissioner. The need of a new film for the home-made moving picture machine, which had been built for the health education of the younger children, was noted. Volunteers agreed to collect health pictures and to mount them on a roll of tracing cloth, thus furnishing the



needed film. The aid of all members was asked for the collection of this material.

Entertainment. — Adjournment was followed by the presentation of a health play entitled, "The Carpenters' Union," (adapted for boys) from Health Plays for School Children published by the Child Health Organization of New York. At the conclusion of the playlet the actors marched away singing:

> Ha, ha, ha! Happy are we!
> Strong and well, as you can see!
> Ha, ha, ha! Happy are we!
> Strong and well, as we can be!

As the last of the group disappeared, eight boys dressed in the white suits of dairymen entered, carrying trays on which were placed a half-pint bottle of milk with straw, a peanut butter sandwich, graham crackers, and an apple for each boy. Needless to say, the members lost no time in consuming the little lunch, gladly giving up for the day their usual outdoor recess.

It was such little surprises as this unexpected repast that had served to make the club meetings popular. Great rivalry of a friendly sort existed among the different committees as to which could provide the most unexpected diversion without violating any of the laws of health.

When the last crumb had disappeared the meeting broke up and regular classwork was resumed. The boys who formed the club were members of the seventh grade of the junior high school.

GERTRUDE DUFFY,
Cambridge, Mass.

Health Books, Pamphlets and Materials for Teachers

AMID the deluge of health material, much of which makes little or no contribution, it is exhilarating to find a book that attempts to be really constructive as does "Health Behavior."[1] Theoretically, all leaders in health education have accepted the philosophy that knowledge about health is not the final aim, that our definition of the goals should include not only knowledge but health attitudes and habits. In this new movement in education teachers and administrators have been greatly puzzled as to the grading of these three elements. Up to to this point the method has been largely one of trial and error.

Doctor Wood and Doctor Lerrigo present to us in this book six scales to guide the educator. Scale I considers the health habits, attitudes and knowledge that should be acquired by the child before entering kindergarten. Scales II, III, IV and V continue the same plan with reference to the completion of the work of the third grade, sixth grade, ninth grade and twelfth grade respectively. Scale VI refers to the health achievements of the adult. The scales have been in preparation by the authors for several years and have been submitted to the criticism of 100 advanced students and teachers of health education, teachers of biology, and physicians.

These scales are of value primarily not because of their finality but as a sound basis for further experimentation and constructive criticism. Those who are interested in mental health as one of the objectives of a health education program will approve the efforts of the authors to set up standards for the healthy personality.

The pioneer work in this volume should make it exceedingly helpful in planning health programs.

A delightful story, "After the Rain,"[2] should help the teacher to make cleanliness one of the delights of childhood. It has colored pictures, catchy poems and the sparkle of imagination. This story should be on the library table in every schoolroom. It may be secured by the teacher free of charge by writing to the Cleanliness Institute.

Here is something different! The effort to popularize health has resulted in an increasing mass of printed material that has such a sameness about it as to prove monotonous. This little book, "The History of Sanitation, Plumbing, Then and Now,"[3] has a picture on each page and a story that is often fascinating if not thrilling. In imagination one goes back to primitive man and the first water pipe, probably a fallen hollow tree. Then there is a rapid survey of the story of plumbing from the most ancient time down to the present time. The reader will smile to read how Virginia placed an annual tax of $30 on every bathtub brought into the state, while proper Boston not more than 100 years ago made bathing unlawful except on medical advice.

The purpose of this pamphlet is to advertise brass pipe and plumbing supplies but it is a book from which adults will get much interesting information. It could be used effectively in health class in the upper grades. A copy may be secured from the publishers for ten cents. Educational institutions may get one free.

Dutch scene from "After the Rain."

1. By Thomas D. Wood, M.D., and Marion Olive Lerrigo, Ph.D. Pp. 150. Public School Publishing Company, Bloomington, Ill., 1927.
2. By Grace T. Hallock. Pp. 96. Cleanliness Institute, 45 East Seventeenth St., New York.
3. Pp. 42. Bridgeport Brass Company, Bridgeport, Conn., 1927.

New Books *on* Health

Reviews of Interest to General Reader, Parent and Teacher

WHEAT FLOUR AND DIET

By C. O. Swanson. Pp. 197. Price $2.50. The Macmillan Company, New York, 1928.

THE vast amount of misunderstanding relative to the actual place of wheat flour in the human diet is more than sufficient occasion for the publication of a sound consideration such as is embodied in this book. The position of the author as head of the department of milling industry in the Kansas State Agricultural College is a guarantee of his competency. Few of the food faddists who have attacked the use of wheat flour have any comprehension of diets as a whole, or, indeed, of the process by which wheat comes to the table. All these facts are made available in Professor Swanson's book.

The chapter on the place of wheat flour in the diet concludes with the following significant paragraph:

"From what has been said it follows that the place of wheat flour in the diet is to supply about two fifths of the total calories and a little more than 30 per cent of the total protein. The mineral deficiency of wheat flour must be made good by the inclusion of milk and certain vegetables in the diet. The wheat proteins are best balanced by those from milk, eggs and meat. The foods which balance wheat flour in respect to mineral elements and protein also supply several of the vitamins."

A recognition of the fact that bread is but one portion of a well balanced human diet is fundamental in overcoming food faddism. Indeed, it would make unnecessary the startling attempts to develop a bread that will be in itself a complete food. MORRIS FISHBEIN, M.D.

YOUR CHILD TODAY AND TOMORROW

By Sidonie Matsner Gruenberg. Pp. 255. Price $2.50. Third edition revised and reset. J. B. Lippincott Company, Philadelphia, 1928.

EIGHT years have elapsed since the appearance of the second edition of this book. In that period points of view have changed greatly, particularly in relation to the psychology of the child. Parental education is the watchword of the hour. The author has revised her book in accordance with modern views. She has not, however, accepted any of the special notions of either the psychoanalyst or the behaviorist as a fundamental guide in her own conceptions. The chapter on sex education is one of the soundest statements on the subject thus far available.

CORRECTIVE PHYSICAL EDUCATION FOR GROUPS

By LeRoy Lowman, M.D., Claire Colestock and Hazel Cooper. Pp. 521, with 93 illustrations. A. S. Barnes and Company, New York, 1928.

THIS book is a stimulating contribution to the field of physical education. It covers such a wide range of material and so many practical phases of the school corrective program that some of it has need to be in the form of a condensed outline. Yet the details cover the field so completely that the book may be considered a fairly inclusive reference book and a fundamental textbook for students and teachers of school corrective work.

In discussing treatment the authors give not only the positive side for constructive teaching but needed cautions in the use of exercises, many of which have been used harmfully in the past. In addition, it emphasizes the need of energy conservation for the delicate, growing child.

The contents of the five parts cover such material as the following: the need of corrective work, an excellent technical presentation of the fundamentals of body statics with details of the physiologic factors concerned and an outline of examination methods and checking of results; classification, equipment and methods of organization; a detailed description of fundamental positions for corrective work, with excellent illustrative photographs, and a series of schedules covering work for restrictive and corrective groups and special exercises for specific conditions of high school, junior high and elementary school students. Specific progressions for each type of exercise are carried through, each of which has been carefully tested out.

The book shows the possibilities and psychologic value of using the game, play, dramatic and rhythmic elements in corrective work and gives much material by way of suggesting adaptations.

The authors show an appreciation of the educational principles necessary as a basis for any satisfactory program and plan their whole program on the psychologic factors that make for real learning through success and joy in activity.

This is a monumental work on the corrective phase of the school physical education program and should be an invaluable aid to student and teacher in this field.

ALICE EVANS.

ATHLETICS FOR WOMEN

BASKET BALL FOR WOMEN. By Alice W. Frymir, B.S. Pp. 260. Illustrated. Price, $2.

FIELD HOCKEY ANALYZED. By Hazel J. Cubberley, B.S. Pp. 188. Illustrated. Price, $2.

VOLLEY BALL FOR WOMEN. By Katherine W. Montgomery, A.B. Pp. 90. Illustrated. Price, $1.60. A. S. Barnes and Company, New York, 1928.

THE publisher is developing a series of books on athletics for women, of which the three volumes here listed constitute a part. The book on basketball deals not only with the fundamentals of the game, including its history, but also has a chapter on healthful living. This portion of the book is sound and is based on competent references. The book is planned primarily for the use of basketball as a school sport and will be exceedingly valuable to the teacher who must oversee such work.

The volume on field hockey is written in simple form and freely illustrated with diagrams and photographs so as to provide adequate instruction.

The book on volley ball, an increasingly useful sport, is a succinct guide to the rules and to the technic. A careful study should aid in the development of skill in any intelligent player.

MORRIS FISHBEIN, M.D.

News *and* Views

From the

FIELD OF HEALTH

PREVENTING DISEASE AT THE COUNTY FAIR

Fairs of all descriptions are in the height of their glory at this time of year—county fairs, state fairs, tri-state fairs, community fairs. With them comes the danger of illness from many causes, for flies are usually plentiful and other opportunities for contamination are equally rife.

Dr. J. C. Anderson, state health officer of Texas, calls attention in his bulletin to the necessity for sanitary regulations at fairs. He recommends:

A safe water supply easily available to the public, preferably by bubbler fountains.

Sanitary toilet facilities, kept scrupulously clean.

Fly-tight containers for garbage, emptied once or twice a day.

Booths for the sale of foodstuffs made flytight by screens, with adequate facilities for sterilization of dishes. All food handlers should have health certificates from reputable physicians.

Public drinking cups and public towels prohibited.

Soft drinks not bottled should be in covered containers, from which the liquid can be removed only through faucets. Paper cups should be used for such drinks.

Ice cream protected by closed containers from dust, dirt and contamination.

BOSTON TECH TO PRODUCE HEALTH FILMS

Plans for a complete program of health education films for public schools have just been announced by the department of biology and public health of Massachusetts Institute of Technology.

Films showing the nature and function of the body and problems in health control of the environment will be graded according to the knowledge already possessed by the children for whom it is planned. All will be produced with the greatest scientific accuracy. It is expected that the first productions will be for the use of upper intermediate schools and junior high schools.

Dr. C. E. Turner, head of the department of biology and public health, will direct the work.

FAMOUS BRAINS HAD VIGOROUS GROWTH

Interest in the brains of famous people is perennial, one of the questions being whether physical make-up of the organ bears any relation to intellectual power. Anatomists have come to the conclusion that intelligence is not fixed by size or structure, but that arrangement of nerve cells, supply of blood and similar factors do have an influence.

Brains of three distinguished Americans: Dr. G. Stanley Hall, psychologist; Dr. William Osler, famous physician, and Dr. Edward S. Morse, zoologist, have recently been weighed and measured at the Wistar Institute of Anatomy and Biology in Philadelphia. These brains were reported to be heavier than the average, containing larger numbers of the thinking brain cells, called neurons, in the opinion of Dr. H. H. Donaldson of the Wistar Institute. Furthermore, the front and rear portions of the three brains were better developed than the average, which indicates a vigorous growth, according to Dr. Donaldson.

JUNIOR SAFETY PATROLS REDUCE ACCIDENTS

Work of junior safety councils showed results in Baltimore during 1927. When the 169 deaths from traffic accidents were analyzed it was found that the fewest accidents occurred in school neighborhoods in which the junior safety patrols were operating. The Baltimore Safety Council has obtained the consent of the school authorities to organize a safety council in every school of the city. It also sponsors each year safety council conventions for the white and colored children to promote interest in the public playgrounds during the summer. These are attended by approximately 3,500 children.

PLAN INVESTIGATION OF HOUSEWIVES' FATIGUE

Housewives are probably the weariest people in the world—at least there are more of them than of any other class. British psychologists, after having conducted studies of fatigue in industry, sports and other departments of activity, now plan to find out why housework is so tiring.

The average home is only rarely arranged to conserve the housekeeper's energy, but another even more important factor is the tendency to carry out daily tasks in ways requiring needless expenditure of energy, said Dr. C. S. Myers of the National Institute of Industrial Psychology, who is to direct the study of the psychology of housework. He believes that valuable suggestions for improvement will be the result of the investigation.

CHILDREN ENJOY HEALTH RESTAURANT PROJECT

A health restaurant project so interested the children of a West Virginia school that they were not absent or tardy during the whole year, their teacher declares in her story in the *Red Cross Courier*.

Colored pictures of food from magazine advertisements were used. A health lesson was taught in the exclusion of coffee, fried foods, cakes, pies and the like from the restaurant. The children made their own table, made menus and classified the foods. Arithmetic was encountered in buying and selling the meals.

When finally the preparations were finished, a child customer bought a meal, and discussion began. Among the questions that arose were the following: Did the customer order the right kind of food? What other foods could he have ordered? Did the clerk spell and list the items correctly? Was the check estimated correctly? Did the customer receive the right change? Did the customer have good manners?

The school became so interested that fame of the restaurant spread and even the townspeople came to see this ingenious project in health education.

American Public Health Association

Pacific and Atlantic

PAUL CROUCH
OF
NEWTON CENTER,
MASS.,
IS THE NEW
national
archery
champion.

NURSES TO STUDY NURSERY SCHOOLS

The Franklin Nursery School in Chicago will be used as a model for a study by public health nurses at the American Public Health Association convention in October.

A NEW KIND OF SUMMER SCHOOL

The negro children shown below are learning health habits at a summer play school in New York, run by the Child Study Association of America.

Child Study Association of America

Pacific and Atlantic

COOLING FOUNTAINS IN PUBLIC PARKS MAKE HOT September days bearable for city dwellers.

CHILDREN LEARN TO KEEP PETS CLEAN

No alley cats of uncertain hygienic status for these little New Yorkers. Their cats and dogs, thoroughly scrubbed with soap and water, were adjudged the most sanitary in a clean pet show conducted by the Bellevue-Yorkville health demonstration.

Wide World

Wide World

BUSINESS MEN OF PHILADELPHIA KEEP YOUNG by antics with broom polo.

Pacific and Atlantic

HEALTH CHAMPIONS OFF FOR WASHINGTON

Good health brought this group of animated boys and girls together. They are the health champions from the states of Washington, New Mexico, South Dakota, Iowa and Illinois, on their way to the 4-H national club camp at Washington, D. C.

PRIZE WINNING CANCER POSTERS

From more than 400 entries the two posters shown here were selected as prize winners in a competition sponsored by the American Society for the Control of Cancer and the Art Alliance of America. The design showing the radiant sword, symbolic of medical knowledge, won the first prize of $500. It is the work of G. E. Durant. The poster at the left, showing the figure of Science holding aloft a lamp of knowledge, brought the third prize of $100 to the artist, J. M. Mitchell.

Questions *and* Answers

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed.

Changing Pitch of Voice

To the Editor:—Is there a simple expedient that can be used to influence a high pitched male voice permanently to take on a lower quality?

F. O. W., Nebraska.

Answer.—When an adult male speaks with a high pitched voice, it indicates that something is wrong with the use of the voice. If the speech apparatus is normal, the high pitched quality can be changed to a lower one. However, this involves a long training under one who is expert in treating speech defects. It is necessary to change the vocal habits of the person, and this cannot be done by any simple, short process but requires careful and somewhat tedious training.

Lotion for Courage

To the Editor:—A short time ago I read of a lotion, said to be developed by British doctors, which would induce courage. I am interested in the study of means of influencing emotions and would appreciate it if you will advise me as to whether there is such an article or not.

A. D., Rhode Island.

Answer.—We have never heard of a lotion that would develop personal courage. Every one knows, however, of the courage associated with drugs or certain alcoholic preparations that dull the sense of judgment. It is conceivable that other drugs that bring about a state of euphoria, or feeling of well being, would also increase physical courage. Coffee is believed to have somewhat this effect, as well as alcoholic preparations.

Every one knows about the act of whistling to keep up one's courage. It is possible to bring about a change in the emotions by fixation on some thing other than the matter that is causing fear. In this way anything rubbed on the skin would aid courage if the person implicitly believed that the lotion gave him courage. Real courage is, however, a matter of training, inherited mentality, and factors little likely to be influenced by drugs. Certainly nothing that can be rubbed on the outside of anybody is likely to influence courage.

First Aid for Snake Bite

To the Editor:—What is the best first aid treatment for snake bite? Is potassium permanganate recommended? R. W., Arizona.

Answer.—The most recent addition to the treatment for snake bite is an antivenin. This substance has been approved by the council on pharmacy and chemistry of the American Medical Association.

Permanganate of potassium has been used, as have other oxidizing agents, to destroy the venom, but more recent studies have made it fairly evident that this action does not take place after the poison has been absorbed, and absorption takes place in a short time. Antiseptics like potassium permanganate may be of use in cases in which the wound made by the snake's fang is widely opened and suction is applied; preferably by a Biers suction apparatus or a similar device. This and the application of an antivenom agent constitute the best treatment known at the present time.

Baking Powders

To the Editor:—Manufacturers of alum powders tell us of the evil of cream of tartar and tartaric acid, while the makers of cream of tartar and similar powders tell us of the danger to the human body from salts of aluminum coming to us who use alum baking powder or aluminum dishes for cooking.

W. H. W., New York.

Answer.—The advertising warfare that has been conducted by certain manufacturers of baking powder is anything but creditable to these concerns. There is no evidence that either kind of baking powder is at all injurious when employed in the usual way.

Nor is there evidence that aluminum dishes for cooking have ever resulted in harm to anybody.

Babies' Shoes

To the Editor:—I have been told at a reliable shoe store that babies should not wear low shoes until they are 4 or 5 years old. Will you please give me your opinion in this matter?

W. E. W., New York.

Answer.—Babies could just as well go without shoes until they are 4 or 5 years of age if it were not for the protection needed from injury and cold. There is no reason why they should not wear low shoes, if they wear shoes at all during this time.

Plastic Surgery

To the Editor:—I am a young man, 24 years of age. I have two brothers and three sisters who are considered good looking, but through some freak of nature my chin is short and slopes backward at about an angle of 40 degrees. Plastic surgery has given war veterans noses and jaws, so why shouldn't I be able to get a chin? I should like to know more about this—who does this kind of work, and whether or not I should have it done?

D. F. S., Montana.

Answer.—One should consult a wise, experienced general surgeon in reference to a desire for plastic surgery to improve the appearance.

There is always a considerable degree of risk in operations of this sort and unless the deformity is very pronounced and disfiguring, it is wiser not to have one performed.

It is commonly the case that one's defects in looks seem greater to oneself than to others.

Surgical Collapse of Lung

To the Editor:—I should be glad to receive from you any information on surgical collapse of the lung or on the removal of a section of the ribs in the treatment of tuberculosis. E. C. J., Arizona.

Answer.—Some patients suffering from pulmonary tuberculosis when the disease has affected but one lung can be aided toward recovery by reducing the size of that lung. Commonly air is injected for this purpose, but many patients cannot be given air because of adhesions that have been caused by the dis-

ease. Then removal of ribs is employed.

These operations are of great benefit to patients in cases of suitable types and their dangers are slight if the operations are not too long delayed and are properly performed.

Acid-Forming Foods

To the Editor:—Do oranges and lemons cure acidosis? My observation and experience teach me to believe they only add more acid. Rheumatic joints become more acid and an itch develops over the chest and stomach after taking orange and lemon juice. Are bananas acid? Where can one get a true list of alkaline foods and a recent list of all the foods listed under vitamin A, B, C, D and E? What diseases follow when these are not in the diet? H. S., Indiana.

Answer.—Oranges and lemons are among the foods that tend to make the blood more alkaline. There is no way in which sensations could indicate that the blood is more or less alkaline; therefore, experience would be of little value.

Bananas are also among the alkaline or base forming foods. The acid forming foods that contain much protein material are eggs, fish, meat and whole wheat. A good list of the alkaline and of the acid forming foods is published by Sherman and Gettler, based in large part on government reports.

Malt Extract

To the Editor:—We should like to receive information in regard to the food value of malt extract. Has any authentic study been made of its use in foods such as are being advertised at the present time?

M. A. D., South Dakota.

Answer.—In reply to an inquiry about malt extract, we cannot do better than quote a paragraph from a book entitled "Nutrition and Clinical Dietetics" by Carter, Howe and Mason. It reads as follows:

"True malt extracts are free from alcohol and contain the soluble principles of malt. Such extracts have a high percentage of sugar, maltose (48 to 70 per cent), a certain proportion of dextrin (2 to 16 per cent), and a high diastatic activity. Most of the malt extracts sold have been found to have the general characteristics of beer. Some that have been analyzed contained approximately from 2 to 9 per cent alcohol. Such extracts have no diastatic activity and their nutritive value depends essentially upon the sugar content, which is in many cases low. These extracts should not be compared with U. S. P. malt extract described above. The following table gives the composition of commercial malt extracts in comparison with the U. S. P. extract."

Analyses of twenty-one samples of commercial preparations sold as malt extract are quoted, showing the following maximum and minimum values.

	Commercial Preparations		U.S.P. (for comparison)
	Maximum	Minimum	
Alcohol	9.11	2.52	
Extract	15.32	5.39	76.6
Ash	0.37	0.14	1.2
Nitrogenous constituents protein	1.09	0.34	3.1
Sugar solids	14.04	4.84	
Maltose	11.17	1.41	65.4
Dextrin	5.80	2.03	6.9

From the table it will be seen that the thick malt extracts contain an abundance of sugar with some dextrin, and it is these that give it its food value. Maltose, sugar and dextrin contained in the malt extracts that are used as beverages are much less nutritious and, indeed, many of them have little more food value than the lager beer of earlier days.

Toxin-Antitoxin

To the Editor:—Is diphtheria toxin-antitoxin really worth while?

A. G., Colorado.

Answer.—The beneficent result of inoculation against diphtheria is one of the best established facts in medicine. A great campaign is in progress in New York to eliminate diphtheria from the state by this method. The city of Auburn reports that there has not been a single death from diphtheria in four years, and similar reports come from other parts of the state where preventive inoculation has been practiced. More than a million children have been inoculated with toxin-antitoxin without a single fatal result.

Trench Mouth

To the Editor:—A friend of mine has trench mouth. A dentist who has been treating her gums with hydrogen peroxide under pressure says the disease is not curable. Another dentist she saw says it is curable by the use of Mercitan applied to the gums, around and between the teeth, on cotton. Which is right, and can a weekly application of Mercitan injure the gums or teeth? If curable, how long should it take to clear up a mild case? Is Mercitan useful for treatment of pyorrhea also? L. T., Massachusetts.

Answer.—Trench mouth is an acute infection caused by two organisms—the fusiform bacillus and a spirochete. It is usually cured within two or three weeks by thorough irrigation with salt water, the local application of an appropriate wash and the internal administration of a preparation of mercury, under the direction of a physician. If the patient smokes cigarets, it is much more difficult to clear up the infection. Cigaret smoking should be entirely discontinued during treatment.

Fistula

To the Editor:—What causes a fistula? Ten years ago I was operated on for fistula, but the opening bleeds and pus runs out of it every four weeks. Is there any cure for it except another operation? Would such a fistula have anything to do with a heavy, vibrating, thumping pulsation in the top of the head; also a congested feeling with pains and itching in the head?

T. J. H., Alabama.

Answer.—Fistula is caused by an infection within the anal or rectal canal. When infection occurs (often caused by diarrhea or by an abrasion), an abscess forms, which burrows through the rectal or anal canal out into the soft tissues leaving a sinus. Sometimes an abscess is caused by taking too much cathartic, causing watery, acrid, irritating stools. Probably the reason for the unsuccessful cure was failure to find the original point of infection or insufficient treatment after operation. It is too late for treatment now. Queer symptoms are sometimes caused by absorption of pus.

Boiling Meat and Vegetables

To the Editor:—Does boiling meat remove the purines? Or should it be twice boiled to get purines out? Does boiling remove lime from vegetables?

D. J., Wisconsin.

Answer.—Boiling meat does not remove the purines, and as they are harmful only in rare cases it is unnecessary to worry about them.

Boiling removes considerable of the mineral content from vegetables, making it desirable to cook them in but little water, so as to avoid draining it off to be thrown away, unless the liquid is used for soup.

Starch

To the Editor:—How much starch is there in yellow ripe soy beans? Is there as much in them as in potatoes? What flours contain least starch? Of the various grains which has least? Which has less, hard or soft wheat?

M. M. B., Indiana.

Answer.—The starch content of yellow ripe soy beans is 38 per cent, only 8 per cent of which is available; in potatoes the starch content is from 18 to 20 per cent. Soy bean flour and casein flour are lowest in starch content. Of the various grains, oats has the least starch, and hard wheat has less than soft.